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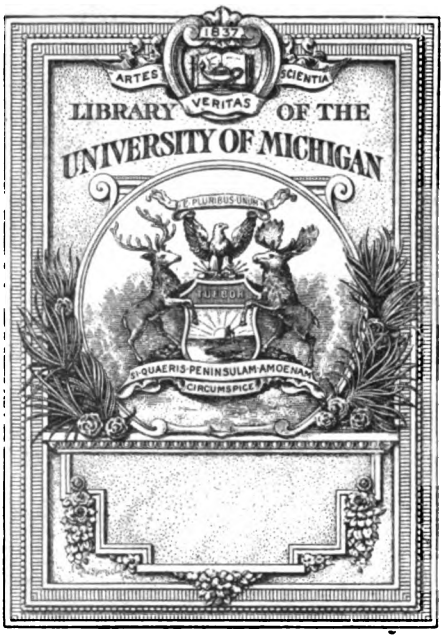

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RELATING TO

EMIGRATION AND IMMIGRATION

FROM AND INTO THE

UNITED KINGDOM

IN THE YEAR 1899,

AND

REPORT TO THE BOARD OF TRADE THEREON.

Board of Trade,
3 May 1900.

COURTENAY BOYLE.

(*Mr. Ritchie.*)

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REPORT.

TO THE SECRETARY OF THE BOARD OF TRADE.

Sir,

THE Tables herewith submitted give an account of the passenger movement between this and other countries in 1899 and previous years. Of the two Divisions in which they are grouped, Part I. relates to the movement to which the words "Emigration" and "Immigration" were originally restricted in this Annual Return, namely, that of persons going to and coming from countries out of Europe; while Part II. continues the statistical information, which has now for some time been published by the Board, as to passenger intercourse between the United Kingdom and the Continent of Europe.

A Memorandum subjoined to this Report (*see* Appendix, p. 17) gives an account of the various sources from which the Department has obtained the information used in compiling these Tables.

The figures for 1899 show an increase as compared with both the two preceding years in the passenger movement both inwards and outwards, the movement between this country and Europe, and between this country and other countries outside Europe being alike greater than in 1898 or 1897. The greatest proportional increase is in the emigrants to countries out of Europe, but the greatest absolute increase is in the movement inwards from Europe. The total result of the entire passenger movement represents a balance outwards of about 22,000 persons, a number smaller than in 1898 by 14,000 persons. This balance outwards has in fact during recent years shown a continuous decrease.

A summary view of the total dimensions of the passenger movement into and out of the United Kingdom in 1899, taking all countries into account, may be obtained by combining the totals given in Parts I. and II., as in the following Table, in which the corresponding figures for 1898 and 1897 are also shown for comparison :—

SUMMARY OF GENERAL PASSENGER MOVEMENT IN 1899, 1898, and 1897.

	1899.	1898.	1897.
	No.	*No.*	*No.*
Outwards :			
To countries out of Europe	240,696	205,171	213,280
To Europe	609,570	590,226	569,150
TOTAL	850,266	795,397	782,430
Inwards :			
From countries out of Europe	162,111	139,346	155,114
From Europe	666,230	620,123	587,000
TOTAL	828,341	759,469	742,114
Balance outwards	21,925	35,928	40,316

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Reasons will be given in the course of this report for representing the total outcome of the whole passenger movement of 1899, (viz., an excess of about 22,000 in the number of persons leaving the United Kingdom over the number of persons arriving here from all parts) as the result of a net efflux on balance of about 47,400 natives, and a net influx on balance of 25,400 foreigners. Among the latter however are included 13,400 foreign sailors, who, coming to the United Kingdom as passengers, are returned among the immigrants included in the above table, but of whom there is no such record when they leave as members of the crews of outgoing ships. Making this deduction then it would appear that the addition to the foreign population of the United Kingdom resulting from the total passenger movement inwards and outwards in 1899 may be estimated at about twelve thousand persons.

PART I.

The tables in this part relate to the movement of passengers between the United Kingdom and all places out of Europe (not being on the Mediterranean Sea). Under this head detailed accounts are given of, first, the gross emigration, *i.e.*, the outward stream of persons who left this country for places out of Europe; next, the immigration, or inward stream of persons who arrived here from such places; and lastly, the net emigration, *i.e.*, the effect of this passenger traffic on the population of the United Kingdom, as measured by the excess in the number of persons going outwards over the number of persons coming inwards.

The records of these movements will be found to show a larger net emigration, the increase in the outward stream being greater than that in the inward. Whilst however the number of emigrants, though greater than in the two preceding years, is but small in comparison with the figures that prevailed in the eighties, the number of immigrants is greater than that recorded in any year except 1894 and 1895.

Taking first the gross emigration, the extent of the movement in 1899 is shown by the following numerical statement, figures for the two preceding years being also subjoined for comparison :—

NUMBER of EMIGRANTS to PLACES out of EUROPE in 1899, 1898, and 1897.

YEAR.	Total Number (including Foreigners).	British and Irish.
1899 - - - - -	240,696	146,362
1898 - - - - - -	*205,171*	*140,644*
1897 - - - - - -	*213,280*	*146,460*

The total number of emigrants from this country to places out of Europe was greater in 1899 than in the preceding year by 35,525, or 17·3 per cent. The number was also greater than in 1897, but slightly less than in 1896, and considerably less than the high figures of ten years ago.

The increase in emigration in 1899, was less among persons of British and Irish origin than among Foreigners (with whom are included a small proportion whose nationality is not stated in the returns) the latter forming 39 per cent. of the total emigrants as compared with 31 per cent. in each of the two preceding years. As will be seen later, when we come to consider the "Alien Lists" in Part II, the majority of the foreign emigrants had landed in the United Kingdom from the Continent within the year. The British and Irish emigrants represented 0·36 per cent. of the estimated population of the United Kingdom in the middle of the year, the corresponding percentage in 1898 having been 0·35 and in 1897, 0·37.

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Taking the three divisions of the United Kingdom separately, it appears that the increase in the native emigration is due to the increase in the number of Irish emigrants, these having increased by 8,495 whilst the Scottish emigrants have increased by 502 only, and the English have decreased by 3,279. The English formed 60 per cent., the Scottish 11 per cent., and the Irish 29 per cent. of the total number of native emigrants, as against 65, 11 and 24 per cent. respectively in each of the two preceding years.

The increase among steerage passengers was proportionately greater than among cabin passengers, the former having increased from 136,371 to 166,526, and the latter from 68,800 to 74,170. The bulk of the steerage passengers sailed from Liverpool, Queenstown, and Southampton, the number in each of these cases being greater than in 1898. The cabin passengers sailed chiefly from Liverpool, Southampton and London. There was a slight decrease in the number sailing from the last-mentioned port.

As to the destination of last year's emigrants, 159,143, or 66 per cent., went to the United States, 33,669 to British North America, 12,268 to Australasia, and 18,863 to the Cape and Natal. Compared with 1898 this is an increase of 35,440 in the case of emigrants to the United States, of 6,182 in the emigrants to British North America, and of 1,248 in the emigrants to Australasia, but a decrease of 6,772 in the emigrants to South Africa. This decrease of 6,772, though it renders the figures lower than in any year since 1894, leaves them higher than in that and in all previous years.

Of British and Irish emigrants taken by themselves 63 per cent. went to the United States, 11 per cent. to British North America, 8 per cent. to Australasia, 10 per cent. to South Africa, and the remainder to other countries out of Europe.

Of the total number of emigrants 26,359, or about 11 per cent., were children under 12 years, and of the adults 125,699 were males, and 88,638 females. As regards the occupations of the adult males, it appears from a comparison of the Table on pages 24 and 25, with the corresponding Table published last year, that there was a large increase in the number described as general labourers, amounting to 11,784 or 47 per cent. Of this class two-thirds were foreigners.

The low proportion of children and the high proportion of females among the Irish emigrants is as noticeable as in previous years, only 6·2 per cent. of the emigrants of Irish origin being children, and the females exceeding the males in number by 4,533.

It will be observed, as in previous years, that a small amount of emigration from the United Kingdom to places out of Europe takes place *viâ* Continental ports (Amsterdam, Antwerp, Genoa, Havre, and Naples). The general tables of emigration to non-European countries do not include the numbers of such emigrants, but the figures (supplied by the courtesy of the shipping companies) are given in Table VII. (Part I). It appears that 50 persons went by these routes to North America in 1899, and 1,069 to other places, or 1,119 in all, as against 1,077 in 1898.

The inward movement of passengers to this country from places out of Europe has next to be considered. Here, as already stated, the numbers were greater than in 1898, although the increase was not sufficient to counterbalance the increase amongst emigrants. Summary figures for 1899 and the two preceding years are given in the following Table :—

NUMBER of IMMIGRANTS from Places out of Europe in 1899, 1898, and 1897.

YEAR.	Total Number (including Foreigners).	British and Irish.
1899 - - - - -	162,111	100,246
1898 - - - - -	*139,346*	*91,248*
1897 - - - - -	*155,114*	*95,221*

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It will be seen that the increase was greater among foreign immigrants than among British and Irish, the former (including those whose nationality was not recorded) having increased by 13,767, or 29 per cent., and the latter by 8,998, or 10 per cent. The increase in foreign immigrants from the United States alone amounted to over 14,000. Among the British and Irish immigrants the most noticeable fact is the large number that returned from the Cape of Good Hope and Natal, viz., 20,621 as compared with 14,092 in 1898. The numbers returning were in fact considerably in excess of the numbers emigrating to these Colonies.

The total number of British and Irish immigrants has often been exceeded, but the number of foreign immigrants and the total number of immigrants of all nationalities from places out of Europe are surpassed by the figures for 1894 and 1895 only.

Comparing the number of emigrants to places out of Europe with that of immigrants therefrom, it appears that in 1899, for every 100 British and Irish passengers who departed from this country 68 returned, while 66 foreigners arrived here from non-European countries for every 100 who went thither from the United Kingdom.

By combining the records of outward with those of inward passengers, we may present a view of the result, on balance, as affecting the population of this country, *i.e.*, the *net* emigration to countries out of Europe in 1899.

This is shown in the following Summary Table, in which corresponding figures for 1898 and 1897 are also given for comparison :—

EXCESS of EMIGRANTS (to Places out of Europe) in 1899, 1898, and 1897.

	Total Number (including Foreigners).	British and Irish.
Number of Emigrants in 1899	240,696	146,362
„ Immigrants „	162,111	100,246
Excess of Emigrants in 1899	78,585	46,116
„ „ 1898	*65,825*	*49,396*
„ „ 1897	*58,166*	*51,239*

It will be seen that the *net* result of last year's passenger movement between this country and places out of Europe was an excess of emigration to the extent of 78,585 persons. Whilst the British and Irish emigrants and immigrants shows an excess of emigrants amounting to only 46,116, as against 49,396 in 1898, the *net* emigration of foreigners has nearly doubled. Thus, as regards foreigners only (including persons whose nationality was not recorded) there were 32,469 more outward passengers to non-European countries than inward passengers therefrom, as against an an excess of 16,429 in 1898.

The *net* emigration of foreigners to British North America was considerably in excess of the net emigration of British and Irish thereto.

The *net* emigration of British and Irish from this country to places out of Europe in 1899, representing 46,116 persons, bore the proportion of 0·11 per cent. to the estimated population of the United Kingdom in the middle of the year, a smaller ratio than that of any year since 1877, except 1894, when it was 0·10 per cent. This excess of native emigrants is the balance of a *net* movement outwards of 38,839 towards the United States, 8,015 towards British North America, 3,889 towards Australasia, 1,562 to other places (except South Africa), and of a *net* movement inwards from the Cape of Good Hope and Natal of 6,189 persons.

On the whole review of the passenger movement of 1899 between this country and countries out of Europe, it may be said that its chief features

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were (1) a diminished emigration to the South African colonies—the troops sent thither not being counted among the emigrants—and a considerably enhanced immigration from those colonies, due, without doubt, to the outbreak of hostilities in that part of the world; and (2) a large increase, especially among foreigners, in the passenger movement to and from the United States, in part no doubt of the nature of a re-action from the low figures brought about in 1898 by the war between America and Spain. Attention may also be called to the increase amongst Irish, and decrease amongst English emigrants, and to the large *net* movement of foreigners towards British North America.

Reference may here be made to the cases in which the lists of emigrants and immigrants contain entries of passengers whose nationality is not specified. The number of such entries (given in the detailed tables appended, Part I.) is small in proportion to the total emigration and immigration figures, and their existence does not materially affect any of the statements or deductions hitherto made. They become, however, of more importance when it is attempted to draw conclusions as to the general effect, on balance, of the movement into and out of this country from and to all other countries, European and non-European taken together, especially as regards the resulting increase or decrease of the alien population of the United Kingdom. It is desirable, therefore, to state what the figures of emigration, immigration, and *net* emigration (to and from countries out of Europe), would be on distributing those passengers whose nationality is not stated, according to the ratio observed to exist between British and Irish on the one hand, and foreigners on the other, among the great bulk of emigrants and immigrants for whom information as to nationality is duly furnished. The number of such emigrants in 1899 (out of a total of 240,696) was 4,314, while for immigrants (out of a total of 162,111) it was 2,289, and distributing these in the manner described we have the following figures:—

Revised Statement.

	British and Irish.	Foreigners.
Number of Emigrants to places out of Europe in 1899 -	149,033	91,663
„ Immigrants „ „ -	101,682	60,429
Net Number of Emigrants -	47,351	31,234

showing a *net* emigration during the year from the United Kingdom to places out of Europe of 47,351 natives and 31,234 foreigners.

Among the appended tables (Part I.) is included, as in former years, a statement (Table No. VIII.) of the number of emigrants from this country to America, who were sent back to the United Kingdom by the United States authorities. The number of such persons sent back (for whatever cause) in 1899, including persons who had gone out in the previous year, was 307, of whom 135 were British or Irish. In 1898 the total number of persons so sent back was 256, of whom 134 were British or Irish.

PART II.

The tables in this part are concerned with the general passenger movement between this country and the Continent of Europe, and particularly with the extent and character of alien immigration into the United Kingdom from Europe, and the effect of this movement during the past year in increasing or decreasing the alien population of this country.

The materials available are less exact than those used in the preceding examination of the passenger movement between this and non-European countries. The information dealing directly with the movement in question

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is obtained from two sources. In the first place, returns are annually furnished by the Belgian Government, and by the several railway companies and English and Foreign shipowners engaged in this traffic. This information, although believed to be relatively complete so far as it goes, deals only with the number of passengers inwards and outwards, and does not afford any direct indication of the nationality of the passengers.

In the second place, information is obtained under Act 6, Will. 4 c. 11, as to the number and nationality of aliens arriving from European ports and all ports on the Mediterranean Sea at each of 27 specified ports. Inasmuch as the object here aimed at is to obtain figures especially with regard to the so-called "destitute alien" class, Alien Lists at five of the principal Channel ports are only asked for with regard to deck passengers, and those who, after landing, proceed by rail as third class passengers. At the remaining ports all aliens are included. In other words these figures cannot be regarded as an exact measure of the immigration of either aliens as a whole or of destitute aliens. It can only be said that they are fairly certain to include all the aliens of the destitute class, whilst, at the same time, there is no doubt, as will appear later, that by far the greater part of them are, in fact, not prospective settlers, but are persons passing through this country to places out of Europe, or passengers travelling to and fro between this country and the Continent on business or pleasure.

In the following account of the figures for 1899 these two sources are dealt with separately, in Sections 1 and 2 respectively, use being also made in Section 2 of certain additional information obtained through special inquiries made by officers of Her Majesty's Customs.

Additional information as to alien immigrants into this country from Europe has been, as in former years, obtained for the use of this Department by the Foreign Office from Her Majesty's Consuls on the Continent. This information is summarised in Section 3 below (p. 13).

As throwing light on the disposal of aliens arriving here from Europe, tabular information is given as to the operation of Jewish and other charitable societies in this country, obtained from reports kindly supplied to this Department by those societies. These figures are dealt with in Section 4 below (p. 14).

Finally, Section 5 (p. 14) deals with information obtained from the police authorities of the chief towns throughout the United Kingdom and from the Local Government Boards of England, Scotland, and Ireland.

1. A summary account of the total number of passengers that travelled in 1899 between this country and the Continent of Europe (but without distinction of nationalities) is given in Table I. (Part II.). The figures, while not put forward as absolutely exact, are believed to be approximately correct; any slight omissions that may possibly exist would apply to both sides of the account, and would not be likely materially to disturb the balance, which is, no doubt, sufficiently accurate for all ordinary purposes.

The totals for 1899, with the figures for 1898 and 1897 added for comparison, are given in the following short Table :—

PASSENGER MOVEMENT between the UNITED KINGDOM and the Continent of EUROPE in 1899, 1898, and 1897.

	1899.	1898.	1897.
Inwards from Europe	666,230	620,123	587,000
Outwards to Europe	609,570	590,226	569,150
Excess of Passengers Inwards	56,660	29,897	17,850

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It will be seen that the passenger traffic, in both directions, between this country and the Continent was larger in 1899 than in 1898, the figures for which latter year were themselves larger than in any year since the Board of Trade commenced, in 1890, to obtain a numerical record of this movement. The increase in the inward movement was considerably greater than that in the outward stream, with the result that the excess of passengers inwards over passengers outwards amounted to 56,660, a figure nearly twice as great as that for 1898, and more than three times as great as in 1897.

As regards the nationality of these pasengers, we have, as already stated, no direct evidence, but we may perhaps assume that the numbers of natives of the United Kingdom travelling in each direction between this country and the Continent are approximately equal, and that the excess of passengers inwards represents foreigners who came from Europe and did not return thither within the year. Making this assumption, we have, in order to ascertain the increase in the foreign population during the year, to make two deductions from these figures. In the first place, there is in each year, as we know from the tables (Part I.) already commented on, a considerable number of foreigners who take passages at ports in this country for places out of Europe. The *net* number of such foreign passengers who proceeded from the United Kingdom to places out of Europe in 1899 was, as shown above,* 31,234. In the second place, there are a number of foreign seamen who (coming principally from Scandinavian ports) arrive here as passengers, but go out again as crews of outward bound vessels. These have therefore been included only in the "inward" side of the account given in the above table. The number of such seamen arriving at our ports in 1899 is found from the Alien Lists (see Tables II. and III., Part II.) to have been 13,362. Making, then, these two deductions, it would appear that the *net* result of the total passenger movement of last year into and out of the United Kingdom was to increase the foreign population of this country, taking all classes and nationalities together, by about 12,000 persons.

2. The information with which we have been so far concerned, while showing the total number of passengers in each direction between this country and the Continent, does not comprise particulars as to the nationality of the passengers. But as regards one side of the movement, viz., the *inward* stream of foreign passengers, we have, as already stated, some information on this as on other heads in the Alien Lists. The regulations under which these lists are obtained have been already referred to, and a more detailed account will be found in the Memorandum appended (Part II., paragraph 2, p. 18). When we regard the total numbers recorded in these lists it is at once evident, if there be any truth in the estimate arrived at above of the number by which the foreign population of the United Kingdom was increased within the past year, that the great majority are not immigrants in the sense of prospective settlers. Indeed a large number are known to be transmigrants, *i.e.*, to be persons proceeding directly to places out of Europe, and a large proportion of the remainder are doubtless persons travelling to and fro between this country and the Continent.

The tables compiled from the Lists are Nos. II.–V. and VII.–XI. (Part II.), in which are given full particulars as to ports of arrival in this country and departure from the Continent, and as to nationality and sex of the immigrants, while the number of seamen included in the Lists is shown separately. A further classification shows separately the passengers stated in the Lists to be *en route* to places beyond the United Kingdom and those whose destination is not so stated, and on this point some additional information (embodied in Table VI., Part II.) has been obtained through special inquiry made by officers of Her Majesty's Customs, who ascertained that a large number of alien immigrants, though not described in the Alien Lists as *en route* to places abroad, were in fact proceeding at once to other countries.

The total number of persons entered on the Alien Lists for 1899 was 114,193 (as against 85,261 in 1898, and 81,834 in 1897). Of these 49,947

* See the corrected figures given on p. 9.

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were stated to be *en route* to other countries, and these passengers would therefore re-embark at once. The remaining number (64,246) is inclusive of 13,362 seamen to be deducted for reasons already explained, leaving a remainder of 50,884, as compared with a similar remainder in 1898 of 40,785, and in 1897 of 38,851.

But as already mentioned, it was ascertained by officers of the Customs, by inquiries which could not be made exhaustive on the subject, that a large number of aliens not described in the lists as proceeding to other countries, especially in the case of those that arrived at London, were in fact on their way thither at once. The number of immigrants in whose case this information was actually obtained last year was 2,889, and the figures already given for alien immigrants not known to have been *en route* to other countries must therefore be further reduced by this number, *i.e.*, to 47,995 as compared with 38,449 in 1898 and 36,175 in 1897.

It will be seen that the total number of aliens known to have been proceeding at once to countries out of the United Kingdom amounted to 52,836. From Table VI. (Part II.) we see that of these about 51,000 were proceeding to America. It appears, therefore, that the majority of the foreign emigrants shown in the tables in Part I., and especially of the foreign emigrants to America, had arrived in the United Kingdom from the Continent within the year.

As the nationality of the additional transmigrants reported by the officers of the Customs is not in every case known, the number of immigrants of each nationality "not *en route*, &c.," can only be given as stated in the Alien Lists, although these numbers are known to be subject to reduction. This is done in the following short table, where the figures for the two preceding years are also subjoined for comparison :—

NATIONALITIES of ALIEN IMMIGRANTS (other than Seamen) not shown in the ALIEN LISTS to be *en route* to other Countries.

Nationalities.	1899.	1898.	1897.
Russians and Poles	20,266	15,248	14,775
Norwegians, Swedes, and Danes	5,695	4,775	4,617
Germans	5,926	5,886	5,496
Italians	5,553	4,224	4,061
French	4,861	4,367	4,477
Austrians and Hungarians	2,548	1,941	1,306
Dutch	2,105	1,820	1,468
Other nationalities	3,930	2,524	2,651
TOTAL	50,884	40,785	38,851

The numbers under most of these heads are larger than any previously recorded, the most noticeable increases being that of 5,018 (or 33 per cent.) in the number of Russians and Poles, and that of 1,329 (or 31 per cent.) in the number of Italians.

The Russians and Poles being the most important class for the purpose of any inquiry into *destitute* alien immigration, it is satisfactory to record that the "Russo-Jewish and Jewish Board of Guardians Conjoint "Committee" reports that "there has been during the past year some little "lull in the influx of Russo-Jewish refugees. The number of new cases, "which had in 1898 exhibited a considerable increase beyond that of the "previous year, has declined."

Of the Russian and Polish immigrants the majority (14,927 or 74 per cent.) landed as in previous years at the Port of London. The number landing at Grimsby shows a remarkable increase, having been 3,671 (or 18

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per cent. of the whole) as compared with 1,278 in 1898 and 685 in 1897. At Hull 1,115 landed.

Of the total number (20,266) of Russians and Poles shown in the above table 9,385 or 46 per cent. came from Hamburg, 5,079 or 25 per cent. from Bremen, and 3,112 or 15 per cent. from Libau. These figures compared with those for 1898 show an increase of over 2,000 in the arrivals from Hamburg, of 1,000 from Libau, and of about 300 from Bremen. Amongst the smaller numbers of Russians and Poles arriving from other Continental ports the increase (from 101 in 1898 to 413 in 1899) in the number from the Finnish ports of Hango and Helsingfors is worth recording. The increase in the number of aliens of all nationalities who arrived in the United Kingdom from Finnish Ports and were described in the Alien Lists as *en route* to places abroad, was, however, 9,920.

How many of these Russians and Poles who were not stated in the Alien Lists to be *en route* to other countries subsequently left the United Kingdom within the year, we have, as already pointed out, no means of knowing; but that many did so leave is certain, for a large number of persons belonging to these nationalities were included among the 2,889 aliens who, as mentioned above, were ascertained by the Customs officers to be proceeding forthwith to other countries, though not so stated in the Alien Lists, whilst a certain number of the immigrants doubtless left the country subsequently, either through the aid of the Jewish Board of Guardians, or the "Conjoint Committee" of that body and the Russo-Jewish Committee, or without such assistance.

During the year 1899, the above agencies assisted about 2,400 Jews (mostly Russians and Poles) to emigrate or to return to the Continent, and whilst no doubt only a part of these had arrived in this country during the year, this outflow must be taken into account in estimating the growth of the foreign Jewish population of London.

It is known also that on a smaller scale various Jewish charitable organizations in the provinces assisted poor Jews to emigrate during the year.

It is clear, therefore, that there is an appreciable outflow of Russian and Polish Jews, other than those described as transmigrants in the Alien Lists, to be set against the immigration, although the data do not exist to enable its magnitude to be estimated.

3. Consular reports have again, as in previous years, been obtained from various European centres (48 in all, *see* Table XXIII., Part II.) as to the existence of any movement of population likely to result in an immigration of indigent aliens into the United Kingdom.

The Consul-General at *Hamburg* reports that no information can be obtained as to the condition of the emigrants who leave that port for England, but that a large number of them are believed to be *en route* to other countries *viâ* England.

The Consul at *Riga* refers to the increase in the number of emigrants from Libau, and states that many who in previous years emigrated to the Transvaal have recently returned.

The Consul-General at *Havre* again refers to the number of third-class passengers coming from Italy, Switzerland, Germany, &c., who cross from Dieppe, but states that there is no record kept which would make it possible to distinguish destitute aliens from the other passengers.

The Consul at *Dunkirk* states that "it is possible that a few foreigners "have crossed to London with little if anything more than sufficient to pay "their passage."

The Acting Consul at *Amsterdam* reports that the number of destitute aliens who came from that port to England must have been small.

All the remaining reports either state that no destitute aliens have emigrated during the year to the United Kingdom from ports in the districts reported on, or that there is no information available on the subject.

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4. Reference has already been made to the action of Jewish charitable organizations in this country, in so far as they assist the emigration of Jews (especially "alien immigrants"). A considerable amount of information as to the work of these bodies, for a series of years, has been kindly furnished to this Department, and is embodied in the appended Tables (XII.—XXII., Part II.).

In London the number of *new* cases (the applicants in these cases being almost all foreigners) in which relief was granted last year by the Jewish Board of Guardians and the "Russo-Jewish, &c., Conjoint Committee" taken together was 2,152, as against 2,296 in the year preceding. These were cases in which application for relief was made for the first time, but the majority relate to foreigners who had entered the country previous to 1899. The number of individuals comprised in these new cases is not stated, but taking all the cases relieved, old and new together, it appears that the 4,877 cases included 17,195 individuals as compared with 18,315 individuals comprised in 5,119 cases relieved during the previous year. About half the new cases were relieved by being assisted to emigrate. The total number of persons assisted to emigrate in 1899 has already been given as about 2,400, a number differing but little from that for 1898.

The number of inmates of the Poor Jews' Temporary Shelter, Whitechapel—all of them persons who had come from abroad, mostly from the Continent—was 2,694 in the year ended October 31st 1899, or 634 more than in the previous year, but less than in either 1896 or 1897.

Of provincial societies of this kind for which statistics for 1899 have been obtained, the largest number of cases is dealt with by the Jewish Board of Guardians at Hull. This body relieved 1,157 alien Jews in 1899, of whom 681 had been resident less than three years in the town, compared with 1,306 alien Jews in 1898, of whom 769 had been resident less than three years. For particulars of other similar bodies at Manchester, Liverpool, Leeds, Bradford, Cardiff, Edinburgh and Leith, Glasgow, Brighton and Newcastle-on-Tyne, reference may be made to the tables.

5. As in former years, the police authorities of the chief towns throughout the United Kingdom were asked to report any facts within their knowledge as to destitute aliens who had come to these places for settlement or otherwise, and the increase or decrease of their numbers in 1899.

In reply the *Commissioner of Police for the Metropolis* states that "the "number of Foreign Jews in the East End of London still continues to "increase, and the area inhabited by them is extending."

The police authorities at *Liverpool* report that "there has been no "appreciable increase or decrease in the number of destitute aliens" in the city during the year.

The report from *Manchester* quotes the clerk of the Jewish Board of Guardians to the effect that a decrease in the number of Russian Jews coming to the town had been balanced by an increase in the number of Austrian Jews from Galicia, which was believed to be due to the persecutions there. The clerk further stated that in his opinion there is at present much less pauperism in Manchester than there was 20 years ago, "although the Jewish "population in Manchester is now about 25,000"; and added that "in order "to discourage as much as possible destitute aliens immigrating to "Manchester, the Jewish Board of Guardians have passed a rule to the "effect that no person be relieved by them unless such person has resided "in the city for six months, and if applicants have no friends they are at "once sent back to their own country. Should the applicants decline to go "the Board refuse to assist them, and it is found that this rule has the effect "of causing many destitute aliens to return to their own country."

The report from *Birmingham* gives the number of resident destitute Jews, "who practically constitute the whole of the class referred to as destitute "aliens," as 348 in 1899 as against 378 in 1898, principally Russians and Poles.

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The report from *Leeds* states with regard to the number of resident destitute aliens, that "if there is any difference it is towards a slight "decrease."

From *Bradford* it is reported that none of the applicants for relief to the Relief Society for Foreigners have settled in Bradford.

At *Cardiff* 77 destitute aliens were admitted to the workhouse during the year. It is also reported that a certain number of destitute foreign Jews were relieved by the Cardiff Christian Mission and by the Cardiff Jewish Benevolent Society.

The report from *Hull* states that "the number of destitute aliens (especially "Russian and Polish Jews) settled in Hull has greatly decreased during the "past twelve months."

The chief constable at *Glasgow* reports that six destitute Jews arrived in the city during the year, of whom three settled there.

The report from *Dublin* states that "the number of aliens in this city has "decreased by thirty families—ninety persons. There are no destitute aliens "residing in this city."

Other reports received either state that there were no resident destitute aliens, or that the number had not increased. They relate to the following towns:—Brighton, Bristol, Darlington, Derby, Hastings, Merthyr, Newcastle-on-Tyne, Northampton, Oxford, Plymouth, Reading, Sheffield, Southampton, South Shields, Stockton-on-Tees, Sunderland, Swansea, Wigan, Wolverhampton, Edinburgh and Leith.

On the whole, then, it would appear that, except perhaps in London, there has not been any increase among destitute aliens, and with regard to London, although the number of resident aliens is increasing, the report of the Jewish Board of Guardians, already referred to, appears to indicate that the amount of destitution among the Jewish population was less in 1899 than in the previous year.

Reports have again been obtained through the Local Government Boards of England, Scotland and Ireland as to the extent to which relief was granted to aliens in 1899 by poor law authorities in each division of the United Kingdom. The reports show that, as compared with 1898, such relief was granted to an increased extent in the Metropolis, but to a diminished extent in the rest of the country generally, and particularly in Liverpool and Manchester. Much of the relief granted in the Metropolis was given in the form of "medical aid."

Inquiries have also been made through the Local Government Board as to whether the immigration of destitute aliens increased or decreased in 1899 in the several districts of the East End of London. In reply the Vestry of the parish of St. Matthew, Bethnal Green, states that "the immigration of "such persons is no doubt considerably on the increase." The Vestry of the Hamlet of Mile End Old Town states that "there has been a considerable "increase in the immigration of aliens, but the Vestry has no means of "ascertaining whether the persons are or are not destitute." The Vestry of the parish of St. George-in-the-East reports that in the west district of that parish the number of Polish and other Jews increased slightly in 1899, "owing to the occasional arrival of immediate relatives of those already "established." In the south district of the parish "so far as the Sanitary "Inspector has been able to observe, there has been a decrease, and those "aliens who have located themselves cannot be classed as destitute." The Sanitary Inspector for the east district "did not observe the arrival of any "destitute aliens." The Vestry of the parish of St. Leonard, Shoreditch, reports that "there is no evidence of any increase of destitute aliens," and the Board of Works for the Whitechapel district states that "foreign "immigration still continues to a large extent, although not to the same extent

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"as was the case up to five or six years since." The reports from Bermondsey, Rotherhithe and Poplar show that no aliens settled in those districts in 1899, and the Hackney Vestry and the Limehouse Board of Works state that they are unable to furnish any information as to the immigration of aliens in their respective districts.

I have, &c.,
A. E. BATEMAN.

Commercial, Labour, and Statistical Departments,
Board of Trade, April 1900.

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APPENDIX TO REPORT.

MEMORANDUM as to the SOURCES of the INFORMATION embodied in the TABLES in PARTS I. and II.

PART I.—EMIGRATION and IMMIGRATION to and from NON-EUROPEAN COUNTRIES.

FOR the Tables in this part (other than Nos. VII., VIII. and IX.) the materials are derived from the "passengers lists" furnished by masters of vessels leaving ports in the United Kingdom for places out of Europe (and not within the Mediterranean Sea), or arriving here from such places.

The obligation to furnish such lists was imposed by the Passengers Acts (the provisions of which are now embodied in the Merchant Shipping Act, 1894) as part of the machinery devised by the Legislature for the protection of steerage passengers emigrating to places out of Europe, and not with the object, in the first instance, of securing a statistical account of emigration.

Hence the legal requirement to render these lists is confined to vessels carrying steerage passengers, and the masters of vessels carrying cabin passengers only are not under an obligation to furnish lists, though in practice most, if not all, do so.

Since 1863 the law has provided that the lists to be furnished for outgoing ships carrying steerage passengers shall include all passengers, cabin as well as steerage, and although the lists for vessels arriving from places out of Europe are not by law required to include any passengers other than those in the steerage, they do, in practice, contain information as to inward cabin passengers also.

The clauses of the Merchant Shipping Act, 1894, containing the present law as to these lists are the following:—

Emigration.

Section 311.—(1.) "The master of every ship carrying steerage passengers on a "voyage from the British Islands to any port out of Europe, and not within the "Mediterranean Sea, shall, before demanding a clearance for his ship, sign in duplicate a "passengers list, that is to say a list correctly setting forth the name and other particulars "of the ship and of every passenger, whether cabin or steerage, on board thereof."

The "particulars" here referred to are contained in a Schedule appended to the Act, viz., Schedule 14 (Form II.), in accordance with which the name, sex, and occupation of each passenger are to be stated, as well as the number of the contract ticket, the ports of embarkation and debarkation, the nationality (*i.e.*, whether English, Scotch, Irish, or foreign), the age, and whether the passenger is married or single.

Section 311.—(2.) "The passengers lists shall be countersigned by the emigration "officer, if there is one at the port, and then delivered by the master to the officer of "Customs from whom a clearance is demanded, and that officer shall thereupon counter-"sign and return to the master one duplicate (in this part of this Act referred to as the "'master's list'), and shall retain the other duplicate."

(3.) "If any requirement of this section to be observed by the master is not complied "with in the case of any ship, or any passengers list is wilfully false, the master of the "ship shall for each offence be liable to a fine not exceeding one hundred pounds."

Immigration.

Section 336.—(1.) "The master of every ship bringing steerage passengers to the British "Islands from any port out of Europe, and not within the Mediterranean Sea, shall "within twenty-four hours after arrival, deliver to the emigration officer at the port of "arrival a correct list, signed by the master, and specifying the name, age, and calling of "every steerage passenger embarked, and the port at which he embarked, and showing "also any birth which has occurred amongst the steerage passengers, and if any steerage "passenger has died, his name and the supposed cause of his death."

(2.) "If the master of a ship fails so to deliver the list, or if the list is wilfully false, "he shall for each offence be liable to a fine not exceeding fifty pounds."

In practice, as already mentioned, the information actually contained in the lists is fuller than that which the law expressly requires, and there is no reason to doubt that

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the returns which furnish materials for the tables in Part I. give a virtually complete account of emigration and immigration to and from countries out of Europe, and not bordering on the Mediterranean Sea.

It may be added that Table VII., giving a statistical account of emigration from the United Kingdom to non-European countries *viâ* Continental ports, and Table VIII. showing the number of emigrants to America sent back to this country by the United States authorities, are based on returns not required by law, but courteously furnished by shipowners in response to inquiries made by this Department.

Part II.—Emigration and Immigration to and from the Continent of Europe.

1. The masters of vessels carrying passengers between the United Kingdom and the Continent are under no obligation to render passenger lists of the kind above mentioned. The Board of Trade have, however, now for some years past, made application annually to the railway companies and to English and foreign shipping companies engaged in the transport of passengers between this country and the Continent for information as to the total number of passengers carried in each direction by their vessels within the preceding 12 months, and similar information has been supplied to the Department through the Foreign Office by the Belgian Government as to the Belgian State Mail Packets plying between Dover and Ostend. The particulars asked for have in almost all cases been readily supplied, and have been aggregated in the summary statement given as Table I. (Part II.).

2. Tables II. to V. (inclusive) and Tables VII. to XI. are, as stated in the headings based on the Alien Lists obtained under Act 6 Will. 4, c. 11, s. 2, which provides that masters of all ships arriving "from foreign parts" shall hand in to the Customs authorities a written statement of the number of aliens on board, specifying their names, rank, occupation, and description. This requirement had for many years ceased to be enforced, except at London and (partially) at two or three other ports, but since the Report of the Select Committee of the House of Commons (appointed in 1888) on "Emigration and Immigration (Foreigners)" it has been made operative again, so far as is necessary to obtain an account of the number of aliens arriving from Europe of the class which the Committee had in view. Accordingly the statements or lists specified in this Act are now obtained for aliens arriving from European ports (and all ports on the Mediterranean Sea) at each of the 27 ports in the United Kingdom enumerated in the note appended to Table No. II. In regard to five of these ports, viz., Dover, Folkestone, Harwich, Newhaven, and Southampton, where the traffic of persons travelling between the Continent and the United Kingdom on business or pleasure is very large, it has been thought sufficient that alien lists should be furnished only for deck passengers and for those who, after landing, proceed by rail as third-class passengers, but for the remaining 22 ports the lists include all aliens arriving from the places mentioned.

In Table VI. the information given in the Alien Lists, as to the number of persons that arrived in the United Kingdom from Continental Ports, *en route* to other countries, is combined with further information supplied by officers of Customs as to the number of aliens ascertained by them, on special inquiry, to be on their way to other countries, though not so described in the Alien Lists.

3. The information contained in Tables XII.—XXII. (inclusive), as to the operations of various metropolitan and provincial charitable societies, was furnished by the officers of these societies on the request of the Board of Trade.

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STATISTICAL TABLES.—PART I.

SUMMARY STATEMENT OF EMIGRATION AND IMMIGRATION TO AND FROM NON-EUROPEAN COUNTRIES.

I.—STATEMENT of the Number of PASSENGERS who left the *United Kingdom* for Places out of *Europe* and not within the Mediterranean Sea; and of the Number of PASSENGERS who arrived in the *United Kingdom* from such Places in the Year 1899.

NOTE.—*The statement includes Passengers Outwards and Inwards by Vessels under the Merchant Shipping Act, 1894, Part III., and also Passengers by Vessels not under the Act, so far as the same have been recorded.*

—	North America.	Other Countries.	TOTAL in 1899.	*TOTAL in 1898.*
	OUTWARDS.			
British and Irish	108,892	37,470	146,362	*140,644*
Foreigners	82,958	7,062	90,020	*60,551*
Not Distinguished	962	3,352	4,314	*3,976*
TOTAL Outwards	192,812	47,884	240,696	*205,171*
	INWARDS.			
British and Irish	62,038	38,208	100,246	*91,248*
Foreigners	54,212	5,364	59,576	*46,362*
Not Distinguished	604	1,685	2,289	*1,736*
TOTAL Inwards	116,854	45,257	162,111	*139,346*
BALANCE Outwards	75,958	2,627	78,585	*65,825*

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GENERAL STATEMENT OF EMIGRATION IN 1899.

II.—An Account of the Numbers, Nationalities, and Destinations of Passengers who left the *United Kingdom* in 1899, for Places out of *Europe* and not within the Mediterranean Sea, in Vessels under the Merchant Shipping Act, 1894, Part III.; including also Passengers for Places out of *Europe* in Vessels not under the Act, so far as the same have been recorded;* with Addendum showing the Numbers of Cabin and Steerage Passengers.

NATIONALITY.	To United States.	To British North America.	To Australasia.	To Cape of Good Hope and Natal.	To all other Places.	Total, 1899.*	*Total, 1898.**
English - -	45,723	13,819	8,741	10,182	8,935	87,400	*90,679*
Scotch - - -	8,128	1,703	1,328	2,973	1,940	16,072	*15,570*
Irish - - -	38,631	888	1,398	1,277	696	42,890	*34,395*
Total British and Irish -	92,482	16,410	11,467	14,432	11,571	146,362	*140,644*
Foreigners - -	65,817	17,141	795	4,431	1,836	90,020	*60,551*
Not distinguished -	844	118	6	—	3,346	4,314	*3,976*
Grand Total -	159,143	33,669	12,268	18,863	16,753	240,696	*205,171*

Statement of Numbers of Cabin and Steerage Passengers.

Port of Departure.	Cabin.	Steerage.	Total.
Liverpool - - - - - - -	30,845	87,707	118,552
London - - - - - - - -	16,546	6,783	23,329
Plymouth and Dartmouth - - -	502	794	1,296
Southampton - - - - -	23,805	25,857	49,662
Glasgow and Greenock - - - -	1,931	9,213	11,144
Queenstown - - - - - -	17	28,887	28,904
Londonderry - - - - - -	267	5,512	5,779
Galway - - - - - - - -	—	629	629
All other Ports - - - - -	257	1,144	1,401
Total - - -	74,170	166,526	240,696

* For number of Emigrants who proceeded from the United Kingdom to places out of Europe, *vid* Continental Ports, *see* page 7, and Table VII., page 26.

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III.—ACCOUNT of the Numbers of PASSENGERS, as in the preceding Table, showing the Principal PORTS of the *United Kingdom* from which they EMBARKED in 1899, with their Principal PLACES of DESTINATION.

NAME OF PORT.	To United States.	To British North America.	To Australia and New Zealand.	To East Indies.	To British West Indies.	To Cape of Good Hope and Natal.	To Central and South America.	To all other Places.	TOTAL.
ENGLISH PORTS:									
Liverpool	82,626	30,821	368	994	113	100	1,384	2,146	118,552
London	2,592	51	10,300	3,926	78	3,865	212	2,305	23,329
Plymouth and Dartmouth	57	–	1,052	25	2	139	–	21	1,296
Southampton	29,010	–	499	249	1,400	14,759	2,055	1,690	49,662
Other Ports in England	238	1,046	–	3	–	–	112	2	1,401
TOTAL from Ports in England	114,523	31,918	12,219	5,197	1,593	18,863	3,763	6,164	194,240
SCOTCH PORTS:									
Glasgow and Greenock	9,884	1,175	49	1	32	–	–	3	11,144
TOTAL from Ports in Scotland	9,884	1,175	49	1	32	–	–	3	11,144
IRISH PORTS:									
Queenstown	28,898	6	–	–	–	–	–	–	28,904
Londonderry	5,209	570	–	–	–	–	–	–	5,779
Galway	629	–	–	–	–	–	–	–	629
TOTAL from Ports in Ireland	34,736	576	–	–	–	–	–	–	35,312
GRAND TOTAL	159,143	33,669	12,268	5,198	1,625	18,863	3,763	6,167	240,696

IV.—ACCOUNT of the Number of PASSENGERS of each SEX, as in Table II., distinguishing the NATIONALITIES, and the COUNTRIES to which they EMIGRATED in 1899.

NATIONALITY AND SEX.	To United States.	To British North America.	To Australia and New Zealand.	To East Indies.	To British West Indies.	To Cape of Good Hope and Natal.	To Central and South America.	To all other Places.	TOTAL.
ENGLISH:									
Males	27,473	8,738	5,243	1,399	648	6,676	1,523	1,554	53,254
Females	18,250	5,081	3,498	1,368	448	3,506	866	1,129	34,146
TOTAL	45,723	13,819	8,741	2,767	1,096	10,182	2,389	2,683	87,400
SCOTCH:									
Males	4,405	970	793	432	109	1,981	190	403	9,283
Females	3,723	733	535	425	78	992	88	215	6,789
TOTAL	8,128	1,703	1,328	857	187	2,973	278	618	16,072
IRISH:									
Males	16,547	522	828	169	23	868	60	144	19,161
Females	22,084	366	570	177	7	409	40	76	23,729
TOTAL	38,631	888	1,398	346	30	1,277	100	220	42,890
TOTAL BRITISH AND IRISH:									
Males	48,425	10,230	6,864	2,000	780	9,525	1,773	2,101	81,698
Females	44,057	6,180	4,603	1,970	533	4,907	994	1,420	64,664
TOTAL	92,482	16,410	11,467	3,970	1,313	14,432	2,767	3,521	146,362
FOREIGNERS:									
Males	38,647	11,326	577	106	125	3,060	657	344	54,842
Females	27,170	5,815	218	127	82	1,371	237	158	35,178
TOTAL	65,817	17,141	795	233	207	4,431	894	502	90,020
NATIONALITY NOT DISTINGUISHED:									
Males	421	73	6	536	59	–	78	1,778	2,951
Females	423	45	–	459	46	–	24	366	1,363
TOTAL	844	118	6	995	105	–	102	2,144	4,314
TOTAL:									
Males	87,493	21,629	7,447	2,642	964	12,585	2,508	4,223	139,491
Females	71,650	12,040	4,821	2,556	661	6,278	1,255	1,944	101,205
GRAND TOTAL	159,143	33,669	12,268	5,198	1,625	18,863	3,763	6.167	240,696

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V.—An Account in Detail of the Number and Destination of Passengers who left the of each Sex, and the Conjugal Conditions of the Adults; these Particulars being stated for Foreigners and for other Persons whose Nationality has not been distinguished.

Note.—According to the Merchant Shipping Act, 1894, Part III., all

DESCRIPTION OF EMIGRANT.	DESTINATION.								
	United States.	British North America.	Australia and New Zealand.	East Indies.	British West Indies.	Cape of Good Hope and Natal.	Central and South America.	All other Places.	Total.
English:									
Adults:									
Married - Males	5,577	1,712	1,597	497	272	1,803	468	531	12,457
Married - Females	8,472	2,125	1,617	610	223	1,600	417	482	15,546
Single - Males	15,557	5,797	3,059	766	313	4,207	865	886	31,450
Single - Females	6,052	2,049	1,377	561	171	1,277	299	515	12,301
Conjugal condition not stated - Males	3,869	–	–	–	–	–	–	–	3,869
Conjugal condition not stated - Females	1,312	–	–	–	–	–	–	–	1,312
Total Adults	40,839	11,683	7,650	2,434	979	8,887	2,049	2,414	76,935
Children from 1 to 12 years, and Infants - Males	2,470	1,229	587	136	63	666	190	137	5,478
Children from 1 to 12 years, and Infants - Females	2,414	907	504	197	54	629	150	132	4,987
Total English	45,723	13,819	8,741	2,767	1,096	10,182	2,389	2,683	87,400
Scotch:									
Adults:									
Married - Males	680	191	222	140	31	736	52	146	2,198
Married - Females	1,574	299	218	186	37	462	48	100	2,924
Single - Males	3,060	661	473	244	67	1,070	114	239	5,928
Single - Females	1,541	307	236	152	22	404	28	95	2,785
Conjugal condition not stated - Males	–	–	–	–	–	–	–	–	–
Conjugal condition not stated - Females	–	–	–	–	–	–	–	–	–
Total Adults	6,855	1,458	1,149	722	157	2,672	242	580	13,835
Children from 1 to 12 years, and infants - Males	665	118	98	48	11	175	24	18	1,157
Children from 1 to 12 years, and infants - Females	608	127	81	87	19	126	12	20	1,080
Total Scotch	8,128	1,703	1,328	857	187	2,973	278	618	16,072
Irish:									
Adults:									
Married - Males	841	95	139	69	7	332	10	59	1,552
Married - Females	1,766	112	104	91	3	187	10	36	2,309
Single - Males	14,592	379	634	76	14	481	42	77	16,295
Single - Females	19,147	209	429	60	4	163	26	33	20,071
Conjugal condition not stated - Males	–	–	–	–	–	–	–	–	–
Conjugal condition not stated - Females	–	–	–	–	–	–	–	–	–
Total Adults	36,346	795	1,306	296	28	1,163	88	205	40,227
Children from 1 to 12 years, and Infants - Males	1,114	48	55	24	2	55	8	8	1,314
Children from 1 to 12 years, and Infants - Females	1,171	45	37	26	–	59	4	7	1,349
Total Irish	38,631	888	1,398	346	30	1,277	100	220	42,890
Total British and Irish:									
Adults:									
Married - Males	7,098	1,998	1,958	706	310	2,871	530	736	16,207
Married - Females	11,812	2,536	1,939	887	263	2,249	475	618	20,779
Single - Males	33,209	6,837	4,166	1,086	394	5,758	1,021	1,202	53,673
Single - Females	26,740	2,565	2,042	773	197	1,844	353	643	35,157
Conjugal condition not stated - Males	3,869	–	–	–	–	–	–	–	3,869
Conjugal condition not stated - Females	1,312	–	–	–	–	–	–	–	1,312
Total Adults	84,040	13,936	10,105	3,452	1,164	12,722	2,379	3,199	130,997
Children from 1 to 12 years, and Infants - Males	4,249	1,395	740	208	76	896	222	163	7,949
Children from 1 to 12 years, and Infants - Females	4,193	1,079	622	310	73	814	166	159	7,416
Total British and Irish	92,482	16,410	11,467	3,970	1,313	14,432	2,767	3,521	146,362

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United Kingdom in 1899, as in Table II., showing the Numbers of ADULTS and CHILDREN ENGLISH, SCOTCH, and IRISH PASSENGERS separately, and in the Aggregate, and also for

persons of 12 years of age and upwards are considered as Adults.

DESCRIPTION OF EMIGRANT.		DESTINATION.								
		United States.	British North America	Australia and New Zealand.	East Indies.	British West Indies.	Cape of Good Hope and Natal.	Central and South America	All other Places.	TOTAL.
FOREIGNERS:										
Adults: Married	Males	8,275	2,983	93	43	48	808	229	106	12,585
	Females	8,877	2,151	85	31	39	616	107	64	11,970
Single	Males	26,149	6,415	420	48	67	1,931	387	217	35 634
	Females	14,906	1,973	79	88	32	462	103	77	17,720
Conjugal condition not stated	Males	896	–	–	–	–	–	–	–	896
	Females	446	–	–	–	–	–	–	–	446
TOTAL ADULTS		59,549	13,522	677	210	186	3,817	826	464	79,251
Children from 1 to 12 years, and Infants	Males	3,327	1,928	64	15	10	321	41	21	5,727
	Females	2,941	1,691	54	8	11	293	27	17	5,042
TOTAL FOREIGNERS		65,817	17,141	795	233	207	4,431	894	502	90,020
NATIONALITY NOT DISTINGUISHED:										
Adults: Married	Males	101	7	–	129	13	–	8	117	375
	Females	183	21	–	193	22	–	8	189	616
Single	Males	293	64	6	352	39	–	66	1,640	2,460
	Females	218	22	–	212	18	–	13	155	638
TOTAL ADULTS		795	114	6	886	92	–	95	2,101	4,089
Children from 1 to 12 years, and Infants	Males	27	2	–	55	7	–	4	21	116
	Females	22	2	–	54	6	–	3	22	109
TOTAL NATIONALITY NOT DISTINGUISHED		844	118	6	995	105	–	102	2,144	4,314
TOTAL:										
ADULTS: Married	Males	15,474	4,988	2,051	878	371	3,679	767	959	29,167
	Females	20,872	4,708	2,024	1,111	324	2,865	590	871	33,365
Single	Males	59,651	13,316	4,592	1,486	500	7,689	1,474	3,059	91,767
	Females	41,864	4,560	2,121	1,073	247	2,306	469	875	53,515
Conjugal condition not stated	Males	4,765	–	–	–	–	–	–	–	4,765
	Females	1,758	–	–	–	–	–	–	–	1,758
TOTAL ADULTS		144,384	27,572	10,788	4,548	1,442	16,539	3,300	5,764	214,337
CHILDREN from 1 to 12 years, and Infants	Males	7,603	3,325	804	278	93	1,217	267	205	13,792
	Females	7,156	2,772	676	372	90	1,107	196	198	12,567
GRAND TOTAL		159,143	33,669	12,268	5,198	1,625	18,863	3,763	6,167	240,696

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OCCUPATION OF EMIGRANTS.

VI.—STATEMENT of OCCUPATIONS of ADULT MALE and FEMALE PASSENGERS, as in TABLE II.,

Note.—According to the Merchant Shipping Act 1894, Part III., all

OCCUPATION.	BRITISH AND IRISH ORIGIN.					FOREIGNERS.				
	United States.	British North America	Australasia.	All other Places.	TOTAL.	United States.	British North America	Australasia.	All other Places.	TOTAL.
ADULT MALES:										
Agricultural Labourers, Gardeners, Carters, &c.	4,515	115	253	53	4,936	173	30	33	7	243
Bakers, Confectioners, &c.	79	13	72	36	200	56	111	–	12	179
Blacksmiths and Farriers	50	7	6	38	101	14	39	1	4	58
Boot and Shoe Makers	46	11	16	20	93	90	340	–	34	464
Braziers, Tinsmiths, Whitesmiths, &c.	33	2	2	6	43	9	39	–	1	49
Brick and Tile Makers, Potters, &c.	18	–	4	1	23	2	3	–	–	5
Bricklayers, Masons, Plasterers, Slaters, &c.	307	11	30	137	485	131	31	–	43	205
Builders	29	4	22	48	103	7	2	1	4	14
Butchers, Poulterers, &c.	106	6	59	29	200	63	137	1	9	210
Cabinet-makers and Upholsterers.	20	12	5	12	49	71	100	–	9	180
Carpenters and Joiners	380	51	83	177	691	298	339	1	62	700
Clerks and Agents	2,407	625	291	936	4,259	665	85	8	150	908
Clock and Watch Makers and Jewellers.	47	3	13	17	80	62	50	–	8	120
Coachmakers and Trimmers	2	–	1	4	7	3	1	–	–	4
Coopers	5	–	4	–	9	2	3	–	–	5
Domestic Servants	328	13	47	95	483	171	7	1	28	207
Engine Drivers, Stokers, &c.	81	6	12	121	220	135	–	1	19	155
Engineers	327	14	74	240	655	138	34	3	28	203
Farmers and Graziers	1,505	791	613	275	3,184	1,111	758	139	56	2,064
Founders, Iron and Brass, Moulders, &c.	44	1	6	3	54	5	1	–	–	6
Gentlemen, Professional Men, Merchants, &c.	2,992	1,476	1,988	4,296	10,752	1,319	58	22	533	1,932
Labourers, General	12,503	3,444	807	257	17,011	14,985	4,397	191	87	19,660
Mechanics	4,183	29	61	134	4,407	4,564	85	–	26	4,675
Millers, Maltsters, &c.	27	1	5	6	39	13	10	–	2	25
Miners and Quarrymen	855	39	319	1,527	2,740	247	2	62	893	1,204
Painters, Paperhangers, Plumbers and Glaziers.	151	18	36	102	307	84	110	–	23	217
Printers	67	5	15	29	116	17	24	–	8	49
Railway Servants	17	6	15	52	90	2	2	–	2	6
Saddlers and Harness Makers	15	1	2	5	23	4	2	–	–	6
Sawyers	2	1	1	–	4	1	–	–	–	1
Seamen	303	49	24	90	466	567	13	10	42	632
Shipwrights	6	–	2	3	11	–	2	–	–	2
Shopkeepers, Shopmen, Warehousemen, &c.	1,100	159	207	344	1,810	828	250	6	324	1,408
Smiths, General	56	2	3	24	85	21	33	–	4	58
Spinners and Weavers	420	3	12	1	436	17	35	–	–	52
Tailors	159	55	32	124	370	528	1,326	3	100	1,957
Tanners and Curriers	9	1	1	3	14	15	19	–	–	34
Turners (Wood)	11	–	2	–	13	2	7	–	–	9
Wheelwrights and Millwrights.	8	–	1	3	12	3	3	–	–	6
ARMY and NAVY:—Officers	3	56	39	354	452	–	1	–	21	22
,, ,, Men	3	27	4	24	58	–	–	–	–	–
Other Trades and Professions	962	104	181	601	1,848	629	554	2	221	1,406
MALES:—Occupation not stated.	9,995	1,674	754	4,387	16,810	8,268	355	28	1,124	9,775
ADULT FEMALES:										
Domestic and Farm Servants, Nurses, &c.	17,406	505	750	549	19,210	7,142	284	53	158	7,637
Gentlewomen and Governesses	66	11	13	70	160	37	–	3	10	50
Milliners, Dressmakers, Needlewomen, &c.	823	11	77	23	934	125	100	–	9	234
Shopwomen	82	3	22	7	114	7	2	–	–	9
Spinners and Weavers	469	2	9	2	482	3	–	–	–	3
Other Trades and Professions	270	15	30	123	438	86	68	3	104	261
FEMALES:—Occupation not stated.	20,748	4,554	3,080	7,528	35,910	16,829	3,670	105	1,338	21,942
TOTAL ADULTS	84,040	13,936	10,105	22,916	130,997	59,549	13,522	677	5,503	79,251

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OCCUPATION OF EMIGRANTS.

grouped according to their Destinations, who left the *United Kingdom* in 1899, so far as can be ascertained.

persons of 12 years of age and upwards are considered as Adults.

NATIONALITY NOT DISTINGUISHED.					TOTAL.					OCCUPATION.
United States.	British North America	Australasia.	All other Places.	TOTAL.	United States.	British North America	Australasia.	All other Places.	TOTAL.	
										ADULT MALES:
–	–	–	–	–	4,688	145	286	60	5,179	Agricultural Labourers, Gardeners, Carters, &c.
–	–	–	–	–	135	124	72	48	379	Bakers, Confectioners, &c.
–	–	–	–	–	64	46	7	42	159	Blacksmiths and Farriers.
–	–	–	–	–	136	351	16	54	557	Boot and Shoe Makers.
–	–	–	–	–	42	41	2	7	92	Braziers, Tinsmiths, Whitesmiths, &c.
–	–	–	–	–	20	3	4	1	28	Brick and Tile Makers, Potters, &c.
–	–	–	–	–	438	42	30	180	690	Bricklayers, Masons, Plasterers, Slaters, &c.
–	–	–	–	–	36	6	23	52	117	Builders.
–	–	–	–	–	169	143	60	38	410	Butchers, Poulterers, &c.
–	–	–	–	–	91	112	5	21	229	Cabinet-makers and Upholsterers.
–	–	–	–	–	678	390	84	239	1,391	Carpenters and Joiners.
–	–	1	1	2	3,072	710	300	1,087	5,169	Clerks and Agents.
–	–	–	–	–	109	53	13	25	200	Clock and Watch Makers and Jewellers.
–	–	–	–	–	5	1	1	4	11	Coachmakers and Trimmers.
–	–	–	–	–	7	3	4	–	14	Coopers.
–	–	–	15	15	499	20	48	138	705	Domestic Servants.
–	–	–	–	–	216	6	13	140	375	Engine Drivers, Stokers, &c.
–	–	–	1	1	465	48	77	269	859	Engineers.
–	–	–	–	–	2,616	1,549	752	331	5,248	Farmers and Graziers.
–	–	–	–	–	49	2	6	3	60	Founders, Iron and Brass, Moulders, &c.
35	22	–	204	261	4,346	1,556	2,010	5,033	12,945	Gentlemen, Professional Men, Merchants, &c.
–	–	–	–	–	27,488	7,841	998	344	36,671	Labourers, General.
–	–	–	–	–	8,747	114	61	160	9,082	Mechanics.
–	–	–	–	–	40	11	5	8	64	Millers, Maltsters, &c.
–	–	–	–	–	1,102	41	381	2,420	3,944	Miners and Quarrymen.
–	–	–	–	–	235	128	36	125	524	Painters, Paperhangers, Plumbers and Glaziers.
–	–	–	–	–	84	29	15	37	165	Printers.
–	–	–	–	–	19	8	15	54	96	Railway Servants.
–	–	–	–	–	19	3	2	5	29	Saddlers and Harness Makers.
–	–	–	–	–	3	1	1	–	5	Sawyers.
–	–	–	–	–	870	62	34	132	1,098	Seamen.
–	–	–	–	–	6	2	2	3	13	Shipwrights.
–	–	–	–	–	1,928	409	213	668	3,218	Shopkeepers, Shopmen, Warehousemen, &c.
–	–	–	–	–	77	35	3	28	143	Smiths, General.
–	–	–	–	–	437	38	12	1	488	Spinners and Weavers.
–	–	–	–	–	687	1,381	35	224	2,327	Tailors.
–	–	–	–	–	24	20	1	3	48	Tanners and Curriers.
–	–	–	–	–	13	7	2	–	22	Turners (Wood).
–	–	–	–	–	11	3	1	3	18	Wheelwrights and Millwrights.
–	1	–	22	23	3	58	39	397	497	ARMY and NAVY:—Officers.
–	–	–	1	1	3	27	4	25	59	,, ,, Men.
–	–	–	2	2	1,591	658	183	824	3,256	Other Trades and Professions.
359	48	5	2,118	2,530	18,622	2,077	787	7,629	29,115	MALES:—Occupation not stated.
										ADULT FEMALES:
9	–	–	57	66	24,557	789	803	764	26,913	Domestic and Farm Servants, Nurses, &c.
–	–	–	5	5	103	11	16	85	215	Gentlewomen and Governesses.
–	–	–	–	–	948	111	77	32	1,168	Milliners, Dressmakers, Needlewomen, &c.
–	–	–	–	–	89	5	22	7	123	Shopwomen.
–	–	–	–	–	472	2	9	2	485	Spinners and Weavers.
–	3	–	6	9	356	86	33	233	708	Other Trades and Professions.
392	40	–	742	1,174	37,969	8,264	3,185	9,608	59,026	FEMALES: Occupation not stated.
795	114	6	3,174	4,089	144,384	27,572	10,788	31,593	214,337	- - TOTAL ADULTS.

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VII.—Summary of Emigration from the *United Kingdom viâ* the Continental Ports, Antwerp Amsterdam, Genoa, Havre, and Naples, in 1899.

[These figures are not included in the General Tables of Emigration. *See* Report, p. 7.]

	Adults.		Children.	Total.
	Males.	Females.		
To North America - - - -	18	31	1	50
To all other places - - - -	655	231	183	1,069
Total, 1899 - - -	673	262	184	1,119
„ *1898* - - -	*652*	*282*	*143*	*1,077*

VIII.—Account of the Number of Emigrants to *America* who were sent back to the *United Kingdom* by the United States Authorities, for all Causes, in each of the undermentioned Years.

Years.	British and Irish.				Foreigners.	Total.
	Adults.		Children.	Total.		
	Males.	Females.				
1888 - - - -	35	39	14	88	15	103
1889 - - - -	45	38	16	99	43	142
1890 - - - -	19	35	3	57	18	75
1891 - - - -	59	69	43	171	71	242
1892 - - - -	97	85	40	222	111	333
1893 - - - -	121	81	39	241	99	340
1894 - - - -	115	56	8	179	128	307
1895 - - - -	155	67	10	232	177	409
1896 - - - -	101	54	14	169	87	256
1897 - - - -	74	44	9	127	76	203
1898 - - - -	81	46	7	134	122	256
1899 - - - -	79	40	16	135	172	307

Note.—Two Persons were rejected and sent back to this country from Canada in 1892, 5 in 1893, 3 in 1895, 1 in 1898 and 3 in 1899.

DETENTION MONEY.

IX.—Statement of Sums of Money Recovered for Emigrants by the Emigration Officers during the Year 1899, under the 329th Section of the Merchant Shipping Act, 1894 without resort to Legal Proceedings.

Liverpool.	London.	Glasgow.	Londonderry.	Queenstown.	Total.
£. s. d.	£. s. d.	£. s. d.	£. s. d.	£. d.	£. s. d.
1,103 11 3	10 - -	59 6 6	151 8 -	733 15 3	2,058 1 -

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GENERAL STATEMENT OF IMMIGRATION IN 1899.

X.—ACCOUNT of the Number of PERSONS who Arrived in this Country from Places out of *Europe*, and not within the Mediterranean Sea, so far as recorded, showing their NATIONALITY and the COUNTRIES whence they came, in 1899.

NATIONALITY.	Countries whence Arrived.					TOTAL, 1899.	*TOTAL, 1898.*
	United States.	British North America.	Australasia.	Cape of Good Hope and Natal.	All other Places.		
English - - -	30,652	7,027	6,154	17,488	8,403	69,724	*62,267*
Scotch - - -	6,161	815	913	2,355	1,251	11,495	*10,672*
Irish - - -	16,830	553	511	778	355	19,027	*18,309*
TOTAL British and Irish - -	53,643	8,395	7,578	20,621	10,009	100,246	*91,248*
Foreigners - -	52,321	1,891	199	3,210	1,955	59,576	*46,362*
Not distinguished -	597	7	—	429	1,256	2,289	*1,736*
GRAND TOTAL -	106,561	10,293	7,777	24,260	13,220	162,111	*139,346*

XI.—BALANCE of RECORDED EMIGRATION and IMMIGRATION to and from Places out of *Europe*, and not within the Mediterranean Sea, in 1899.

COUNTRY OF EMIGRATION AND IMMIGRATION.	A.—Comparing Total Emigration with Total Recorded Immigration.				B.—Comparing Emigration and Immigration of Persons of *British* and *Irish* Origin only.			
	Emigrants.	Immigrants.	Excess of		Emigrants.	Immigrants.	Excess of	
			Emigrants.	Immigrants.			Emigrants.	Immigrants.
United States - - - -	159,143	106,561	52,582	—	92,482	53,643	38,839	—
British North America - -	33,669	10,293	23,376	—	16,410	8,395	8,015	—
Australasia - - - -	12,268	7,777	4,491	—	11,467	7,578	3,889	-
Cape of Good Hope and Natal	18,863	24,260	—	5,397	14,432	20,621	—	6,189
All other Places - - -	16,753	13,220	3,533	—	11,571	10,009	1,562	—
TOTAL - - - -	240,696	162,111	78,585	—	146,362	100,246	46,116	—

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XII.—Account showing the Sex and Nationality of the Immigrants who Arrived in and the Countries

Note.—According to the ...ant Shipping Act, 1894, Part III., all

DESCRIPTION OF IMMIGRANTS.		Countries whence Arrived.					Total.
		United States.	British North America.	Australasia.	Cape of Good Hope and Natal.	All other Places.	
English:							
Adults	Males	16,288	3,513	2,835	11,132	4,322	38,090
	Females	10,541	2,626	2,094	3,766	2,613	21,640
Children	Males	1,940	446	620	1,343	731	5,080
	Females	1,883	442	605	1,...7	737	4,914
Total	Males	18,228	3,959	3,455	12,475	5,0...	43,170
	Females	12,424	3,068	2,699	5,013	3,350	26,554
Total English		30,652	7,027	6,154	17,488	8,403	69,724
Scotch:							
Adults	Males	3,033	422	460	1,477	689	6,081
	Females	2,150	276	286	546	357	3,615
Children	Males	506	58	96	167	98	925
	Females	472	59	71	165	107	874
Total	Males	3,539	480	556	1,644	787	7,006
	Females	2,622	335	357	711	464	4,489
Total Scotch		6,161	815	913	2,355	1,251	11,495
Irish:							
Adults	Males	6,457	306	284	516	211	7,774
	Females	8,722	167	148	162	109	9,308
Children	Males	828	36	38	49	18	969
	Females	823	44	41	51	17	976
Total	Males	7,285	342	322	565	229	8,743
	Females	9,545	211	189	213	126	10,284
Total Irish		16,830	553	511	778	355	19,027
Total British and Irish:							
Adults	Males	25,778	4,241	3,579	13,125	5,222	51,945
	Females	21,413	3,069	2,528	4,474	3,079	34,563
Children	Males	3,274	540	754	1,559	847	6,974
	Females	3,178	545	717	1,463	861	6,764
Total	Males	29,052	4,781	4,333	14,684	6,069	58,919
	Females	24,591	3,614	3,245	5,937	3,940	41,327
Total British and Irish		53,643	8,395	7,578	20,621	10,009	100,246

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the United Kingdom from Places out of *Europe*, and not within the Mediterranean Sea, in 1899, whence they came.

persons of 12 years of age and upwards are considered as Adults.

DESCRIPTION OF IMMIGRANTS.	Countries whence Arrived.					TOTAL.
	United States.	British North America.	Australasia.	Cape of Good Hope and Natal.	All other Places.	
FOREIGNERS:						
Adults - Males	28,149	1,076	110	2,223	1,289	32,847
Adults - Females	19,152	519	41	558	444	20,714
Children - Males	2,506	151	30	224	124	3,035
Children - Females	2,514	145	18	205	98	2,980
TOTAL - Males	30,655	1,227	140	2,447	1,413	35,882
TOTAL - Females	21,666	664	59	763	542	23,694
TOTAL FOREIGNERS	52,321	1,891	199	3,210	1,955	59,576
NATIONALITY NOT DISTINGUISHED						
Adults - Males	262	4	—	—	1,040	1,306
Adults - Females	314	2	—	—	205	521
Children - Males	12	1	—	—	7	20
Children - Females	9	—	—	—	4	13
Sex, etc., not distinguished	—	—	—	429	—	429
TOTAL - Males	274	5	—	—	1,047	1,326
TOTAL - Females	323	2	—	—	209	534
TOTAL - Sex not distinguished	—	—	—	429	—	429
TOTAL NATIONALITY NOT DISTINGUISHED	597	7	—	429	1,256	2,289
TOTAL:						
Adults - Males	54,189	5,321	3,689	15,348	7,551	86,098
Adults - Females	40,879	3,590	2,569	5,032	3,728	55,798
Children - Males	5,792	692	784	1,783	978	10,029
Children - Females	5,701	690	735	1,668	963	9,757
Sex, etc., not distinguished	—	—	—	429	—	429
TOTAL - Males	59,981	6,013	4,473	17,131	8,529	96,127
TOTAL - Females	46,580	4,280	3,304	6,700	4,691	65,555
TOTAL - Sex not distinguished	—	—	—	429	—	429
GRAND TOTAL	106,561	10,293	7,777	24,260	13,220	162,111

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COMPARATIVE TABLES, EMIGRATION.

XIII.—General Statement of Emigration from the *United Kingdom* to Places out of *Europe*, and not within the Mediterranean Sea, from 1815 to 1899, including British Subjects and Foreigners, with the Destinations of the Emigrants. [*Prior to 1853 the Nationalities were not distinguished, and this Table is divided into Two Periods, one before, and the other dating from, 1853, so as to facilitate comparison with the succeeding Table, which shows the Emigration of Persons of British and Irish Origin only.*]

YEAR OR PERIOD.	UNITED STATES.	BRITISH NORTH AMERICA.	AUSTRALASIA.	CAPE OF GOOD HOPE AND NATAL.	ALL OTHER PLACES.	TOTAL.
1815–1820 (inclusive)	50,359	70,438	*	2,731		123,528
1821–1830 „	99,801	139,269	*6,417	1,805		247,292
1831–1840 „	308,247	322,485	67,882	4,536		703,150
1841–1850 „	1,094,556	429,044	127,124	12,085	22,083	1,684,892
1851	267,357	42,605	21,532	718	3,754	335,966
1852	244,261	32,873	87,881	834	2,915	368,764
Total, 1815–52 (38 years.)	2,064,581	1,036,714	310,836	51,461		3,463,592
Total, 1853–60 (8 years.)	983,625	159,807	397,389	12,974	28,680	1,582,475
Total, 1861–70 (10 years.)	1,424,466	195,250	280,198	12,094	55,562	1,967,570
1871	198,843	32,671	12,227	1,070	7,624	252,435
1872	233,747	32,205	15,876	1,842	11,543	295,213
1873	233,073	37,208	26,428	2,838	11,065	310,612
1874	148,161	25,450	53,958	4,023	9,422	241,014
1875	105,046	17,378	35,525	5,628	10,232	173,809
1876	75,533	12,327	33,191	6,634	10,537	138,222
1877	64,027	9,289	31,071	5,321	10,263	119,971
1878	81,557	13,836	37,214	4,930	10,126	147,663
1879	134,590	22,509	42,178	7,665	10,221	217,163
1880	257,274	29,340	25,438	9,803	10,439	332,294
Total, 1871–80 (10 years.)	1,531,851	232,213	313,106	49,754	101,472	2,228,396
1881	307,973	34,561	24,093	14,229	11,658	392,514
1882	295,539	53,475	38,604	13,614	12,056	413,288
1883	252,226	53,566	73,017	6,713	11,635	397,157
1884	203,519	37,043	45,944	4,699	12,696	303,901
1885	184,470	22,928	40,689	3,960	12,338	264,385
1886	238,386	30,121	44,055	4,659	13,580	330,801
1887	296,901	44,406	35,198	5,658	14,331	396,494
1888	293,087	49,107	31,725	7,705	16,870	398,494
1889	240,395	38,056	28,834	15,671	19,685	342,641
1890	233,522	31,897	21,570	12,083	16,908	315,980
Total, 1881–90 (10 years.)	2,546,018	395,160	383,729	88,991	141,757	3,555,655
1891	252,016	33,752	19,957	10,686	18,132	334,543
1892	235,221	41,866	16,183	11,641	16,486	321,397
1893	213,212	50,381	11,412	16,158	16,470	307,633
1894	159,431	23,633	11,151	16,760	15,852	226,827
1895	195,632	22,357	10,809	25,988	16,986	271,772
1896	154,496	22,590	10,710	35,840	18,316	241,952
1897	132,048	22,669	12,396	28,801	17,366	213,280
1898	123,703	27,487	11,020	25,635	17,326	205,171
1899	159,143	33,669	12,268	18,863	16,753	240,696
Total, 1853–99 (47 years.)	8,110,862	1,260,834	1,490,328	354,185	481,158	11,697,367
Grand Total, 1815–99 (85 years.)	10,175,443	2,297,548	1,801,164	886,804		15,160,959

* The Customs Returns do not record any Emigration to Australia during the years 1815 to 1824, inclusive; but it appears from other sources that there went out in 1821, 320; in 1822, 875; in 1823, 543; in 1824, 780; and in 1825, 458 persons. These numbers have not been included in the totals of this table.

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XIV.—STATEMENT showing the NUMBER and PERCENTAGE of PERSONS of BRITISH and IRISH ORIGIN only, who left the *United Kingdom* for the UNITED STATES, BRITISH NORTH AMERICA, AUSTRALASIA, CAPE OF GOOD HOPE AND NATAL and all other Places out of *Europe*, and not within the Mediterranean Sea, in each Year from 1853 to 1899, inclusive.

(Prior to 1853 the Nationalities were not given.)

YEARS.	UNITED STATES.		BRITISH NORTH AMERICA.		AUSTRAL-ASIA.		CAPE OF GOOD HOPE AND NATAL.		ALL OTHER PLACES.		TOTAL.
	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.	Number.	Per-centage.	
1853	190,952	69	31,779	11	54,818	20			580	–	278,129
1854	153,627	58	35,679	13	77,526	29			215	–	267,047
1855	86,239	57	16,110	11	47,284	32			390	–	150,023
1856	94,931	64	11,299	8	41,329	28			725	–	148,284
1857	105,516	58	16,803	9	57,858	32			874	1	181,051
1858	49,356	52	6,504	7	36,454	38			2,753	3	95,067
1859	57,096	59	2,469	3	28,604	29			8,924	9	97,093
1860	67,879	71	2,765	3	21,434	22			3,911	4	95,989
TOTAL, 1853–60 (8 years.)	805,596	61	123,408	10	365,307	28			18,372	1	1,312,683
1861	38,160	58	3,953	6	20,597	32	Particulars for the Cape of Good Hope and Natal cannot be given separately for these years. The numbers are included under the head of All Other Places.		2,487	4	65,197
1862	48,726	50	8,328	8	38,828	40			1,881	2	97,763
1863	130,528	68	9,665	5	50,157	26			2,514	1	192,864
1864	130,165	70	11,371	6	40,073	21			5,472	3	187,081
1865	118,463	68	14,424	8	36,683	21			5,321	3	174,891
1866	131,840	77	9,988	6	23,682	14			4,543	3	170,053
1867	126,051	80	12,160	8	14,023	9			4,748	3	156,982
1868	108,490	78	12,332	9	12,332	9			5,033	4	138,187
1869	146,737	79	20,921	11	14,457	8			4,185	2	186,300
1870	153,466	76	27,168	13	16,526	8			5,351	3	202,511
TOTAL, 1861–70 (10 years.)	1,132,626	72	130,310	8	267,358	17			41,535	3	1,571,829
1871	150,788	78	24,954	13	11,695	6			5,314	3	192,751
1872	161,782	77	24,382	12	15,248	7			9,082	4	210,494
1873	166,730	73	29,045	13	25,137	11			7,433	3	228,345
1874	113,774	58	20,728	10	52,581	27			10,189	5	197,272
1875	81,193	58	12,306	9	34,750	24			12,426	9	140,675
1876	54,554	50	9,335	9	32,196	29			13,384	12	109,469
1877	45,481	48	7,720	8	30,138	32	4,834	5	7,022	7	95,195
1878	54,694	49	10,652	9	36,479	32	4,337	4	6,740	6	112,902
1879	91,806	56	17,952	11	40,959	25	6,895	4	6,662	4	164,274
1880	166,570	73	20,902	9	24,184	11	9,059	4	6,827	3	227,542
TOTAL, 1871–80 (10 years.)	1,087,372	65	177,976	11	303,367	18	–	–	* 110,204	6	1,678,919
1881	176,104	73	23,912	10	22,682	9	12,905	5	7,399	3	243,002
1882	181,903	65	40,441	15	37,289	13	12,063	4	7,670	3	279,366
1883	191,573	60	44,185	14	71,264	22	5,742	2	7,354	2	320,118
1884	155,280	64	31,134	13	44,255	18	3,954	2	7,556	3	242,179
1885	137,687	66	19,838	9	39,395	19	3,268	2	7,456	4	207,644
1886	152,710	65	24,745	11	43,076	18	3,897	2	8,472	4	232,900
1887	201,526	72	32,025	11	34,183	12	4,909	2	8,844	3	281,487
1888	195,986	70	34,853	13	31,127	11	6,466	2	11,496	4	279,928
1889	168,771	67	28,269	11	28,294	11	13,884	5	14,577	6	253,795
1890	152,413	70	22,520	10	21,179	10	10,321	5	11,683	5	218,116
TOTAL, 1881–90 (10 years.)	1,713,953	67	301,922	12	372,744	14	77,409	3	92,507	4	2,558,535
1891	156,395	72	21,578	10	19,547	9	9,090	4	11,897	5	218,507
1892	150,039	71	23,254	11	15,950	8	9,891	5	10,908	5	210,042
1893	148,949	72	24,732	12	11,203	5	13,097	6	10,833	5	208,814
1894	104,001	67	17,459	11	10,917	7	13,177	8	10,476	7	156,030
1895	126,502	68	16,622	9	10,567	6	20,234	11	11,256	6	185,181
1896	98,921	61	15,267	10	10,354	6	24,594	15	12,789	8	161,925
1897	85,324	58	15,571	11	12,061	8	21,109	14	12,395	9	146,460
1898	80,494	57	17,640	12	10,693	8	19,756	14	12,061	9	140,644
1899	92,482	63	16,410	11	11,467	8	14,432	10	11,571	8	146,362
GRAND TOTAL, 1853–99 (47 years.)	5,782,654	67	902,149	10	1,421,535	16	–	–	† 589,593	7	8,695,931

* Including the emigrants shown under the head of Cape of Good Hope and Natal in the years 1877–1880.
† Including the emigrants shown under the head of Cape of Good Hope and Natal in the years 1877–1899

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XV.—STATEMENT showing the PROPORTION to the POPULATION of the EMIGRATION from the *United Kingdom* to Places out of *Europe*, and not within the Mediterranean Sea, of PERSONS of BRITISH and IRISH ORIGIN only, in each year from 1871 to 1899; with Averages for Quinquennial and other Periods since 1853.

*** This Table shows the Gross Emigration only, and is subject to the qualification that Recorded Immigration in recent years is much larger than formerly.

YEAR OR QUINQUENNIAL PERIOD.	Estimated Population at Middle of each Year and Quinquennial or other Period.	Emigration of each Year, and Average Annual Emigration of Quinquennial or other Period.	Proportion of Emigration to Population, per Cent.
Three Years, 1853–55	*27,674,341*	*231,733*	*0·84*
Five Years, 1856–60	*28,391,544*	*123,497*	*0·43*
Five Years, 1861–65	*29,459,465*	*143,559*	*0·48*
Five Years, 1866–70	*30,696,335*	*170,807*	*0·56*
Ten Years, 1861–70	*30,077,900*	*157,183*	*0·52*
1871	31,555,694	192,751	0·61
1872	31,874,183	210,494	0·66
1873	32,177,550	228,345	0·71
1874	32,501,517	197,272	0·61
1875	32,838,758	140,675	0·43
Five Years, 1871–75	*32,189,540*	*193,907*	*0·60*
1876	33,199,994	109,469	0·33
1877	33,575,941	95,195	0·28
1878	33,943,773	112,902	0·33
1879	34,302,557	164,274	0·48
1880	34,622,930	227,542	0·66
Five Years, 1876–80	*33,929,039*	*141,876*	*0·42*
Ten Years, 1871–80	*33,059,290*	*167,892*	*0·51*
1881	34,934,476	243,002	0·70
1882	35,206,617	279,366	0·79
1883	35,449,721	320,118	0·90
1884	35,724,231	242,179	0·68
1885	36,015,601	207,644	0·58
Five Years, 1881–85	*35,466,129*	*258,462*	*0·73*
1886	36,313,582	232,900	0·64
1887	36,599,143	281,487	0·77
1888	36,881,271	279,928	0·76
1889	37,178,929	253,795	0·68
1890	37,484,764	218,116	0·58
Five Years, 1886–90	*36,891,538*	*253,245*	*0·69*
Ten Years, 1881–90	*36,178,833*	*255,853*	*0·71*
1891	37,796,390	218,507	0·58
1892	38,103,519	210,042	0·55
1893	38,434,629	208,814	0·54
1894	38,777,687	156,030	0·40
1895	39,113,465	185,181	0·47
Five Years, 1891–95	*38,445,138*	*195,715*	*0·51*
1896	39,464,582	161,925	0·41
1897	39,825,357	146,460	0·37
1898	40,190,806	140,644	0·35
1899	40,559,954	146,362	0·36

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XVI.—STATEMENT showing in Detail the DESTINATIONS of PERSONS who left the *United Kingdom* for Places out of *Europe*, and not within the Mediterranean Sea, since the 1st January 1853, distinguishing English, Scotch, Irish, and Foreigners.

NATIONALITIES.	Annual Average, 1853–60. 8 Years.	Annual Average, 1861–70. 10 Years.	Annual Average, 1871–80. 10 Years.	Annual Average, 1881–90. 10 Years.	Annual Average, 1891–95. 5 Years.	1896.	1897.	1898.	1899.	Total for 47 Years, 1853–99.
TO UNITED STATES.										
Of British and Irish Origin:										
English	24,460	36,511	54,975	90,919	74,201	48,434	43,381	42,244	45,723	**2,570,530**
Scotch	4,383	7,667	8,807	17,816	14,342	10,535	9,121	7,372	8,128	**484,826**
Irish	71,856	69,084	44,955	62,660	48,634	39,952	32,822	30,878	38,631	**2,727,298**
TOTAL of British and Irish Origin	100,699	113,262	108,737	171,395	137,177	98,921	85,324	80,494	92,482	**5,782,654**
Foreigners	12,059	22,837	41,886	82,242	73,886	55,165	46,193	42,659	65,817	**2,145,394**
Not distinguished	10,195	6,347	2,562	964	39	410	531	550	844	**182,814**
TOTAL	122,953	142,446	153,185	254,601	211,102	154,496	132,048	123,703	159,143	**8,110,862**
TO BRITISH NORTH AMERICA.										
Of British and Irish Origin:										
English	3,791	6,589	12,638	22,222	17,777	12,802	13,442	15,050	13,819	**588,821**
Scotch	3,550	2,434	2,581	3,519	1,717	1,563	1,281	1,717	1,703	**128,595**
Irish	8,085	4,008	2,578	4,451	1,235	902	848	873	888	**184,733**
TOTAL of British and Irish Origin	15,426	13,031	17,797	30,192	20,729	15,267	15,571	17,640	16,410	**902,149**
Foreigners	1,199	3,978	5,334	9,320	13,642	7,270	7,040	9,813	17,141	**305,382**
Not distinguished	3,351	2,516	89	4	27	53	58	34	118	**53,303**
TOTAL	19,976	19,525	23,220	39,516	34,398	22,590	22,669	27,487	33,669	**1,260,834**
TO AUSTRALASIA.										
Of British and Irish Origin:										
English	27,311	14,211	20,035	27,227	10,868	9,219	10,396	8,635	8,741	**924,558**
Scotch	6,829	4,238	4,107	4,499	1,460	677	1,032	1,142	1,328	**194,501**
Irish	11,523	8,292	6,195	5,548	1,309	458	633	916	1,398	**302,476**
TOTAL of British and Irish Origin	45,663	26,736	30,337	37,274	13,637	10,354	12,061	10,693	11,467	**1,421,535**
Foreigners	1,077	587	928	1,095	255	347	315	294	795	**37,735**
Not distinguished	2,934	697	46	4	10	9	20	33	6	**31,058**
TOTAL	49,674	28,020	31,311	38,373	13,902	10,710	12,396	11,020	12,268	**1,490,328**
TO ALL OTHER PLACES.										
Of British and Irish Origin:										
English	1,241	3,205	9,408	14,528	20,727	32,382	27,439	24,750	19,117	**488,651**
Scotch	428	474	1,070	1,675	2,657	4,091	4,690	5,339	4,913	**67,946**
Irish	627	474	542	789	788	910	1,375	1,728	1,973	**32 996**
TOTAL of British and Irish Origin	2,296	4,153	11,020	16,992	24,172	37,383	33,504	31,817	26,003	**589,593**
Foreigners	85	1,028	2,122	3,677	5,137	13,233	9,384	7,785	6,367	**121,308**
Not distinguished	2,826	1,584	1,980	3,406	3,723	3,540	3,279	3,359	3,346	**124,442**
TOTAL	5,207	6,765	15,122	23,075	33,032	54,156	46,167	42,961	35,616	**835,343**
TO ALL PLACES.										
Of British and Irish Origin:										
English	56,803	60,517	97,056	154,896	123,573	102,837	94,658	90,679	87,400	**4,572,560**
Scotch	15,191	14,808	16,565	27,509	20,176	16,866	16,124	15,570	16,072	**875,868**
Irish	92,091	81,858	54,270	73,448	51,966	42,222	35,678	34,395	42,890	**3,247,503**
TOTAL of British and Irish Origin	164,085	157,183	167,891	255,853	195,715	161,925	146,460	140,644	146,362	**8,695,931**
Foreigners	14,419	28,431	50,270	95,334	92,920	76,015	62,932	60,551	90,020	**2,609,819**
Not distinguished	19,305	11,143	4,677	4,378	3,799	4,012	3,888	3,976	4,314	**391,617**
TOTAL	197,809	196,757	222,838	355,565	292,434	241,952	213,280	205,171	240,696	**11,697,367**

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XVII.—STATEMENT showing the number of Persons of ENGLISH, SCOTCH, and IRISH ORIGIN who left the *United Kingdom* for Places out of *Europe*, and not within the Mediterranean Sea, with the Proportion that the Number of each Nationality is of the Total of such Persons, from 1853 to 1899, inclusive.

YEAR OR PERIOD.	ENGLISH.		SCOTCH.		IRISH.		TOTAL BRITISH AND IRISH.
	Number.	Per-centage of Total.	Number.	Per-centage of Total.	Number.	Per-centage of Total.	
TOTAL, 1853–55 - - -	211,013	30	62,514	9	421,672	61	695,199
TOTAL, 1856–60 - - -	243,409	39	59,016	10	315,059	51	617,484
TOTAL, 1861–65 - - -	236,838	33	62,461	9	418,497	58	717,796
1866 - - - - -	58,856	35	12,307	7	98,890	58	170,053
1867 - - - - -	55,494	35	12,866	8	88,622	57	156,982
1868 - - - - -	58,268	42	14,954	11	64,965	47	138,187
1869 - - - - -	90,416	49	22,559	12	73,325	39	186,300
1870 - - - - -	105,293	52	22,935	11	74,283	37	202,511
TOTAL, 1866–70 - - -	368,327	43	85,621	10	400,085	47	854,033
1871 - - - - -	102,452	53	19,232	10	71,067	37	192,751
1872 - - - - -	118,190	56	19,541	9	72,763	35	210,494
1873 - - - - -	123,343	54	21,310	9	83,692	37	228,345
1874 - - - - -	116,490	59	20,286	10	60,496	31	197,272
1875 - - - - -	84,540	60	14,686	10	41,449	30	140,675
TOTAL, 1871–75 - - -	545,015	56	95,055	10	329,467	34	969,537
1876 - - - - -	73,396	67	10,097	9	25,976	24	109,469
1877 - - - - -	63,711	67	8,653	9	22,831	24	95,195
1878 - - - - -	72,323	64	11,087	10	29,492	26	112,902
1879 - - - - -	104,275	64	18,703	11	41,296	25	164,274
1880 - - - - -	111,845	49	22,056	10	93,641	41	227,542
TOTAL, 1876–80 - - -	425,550	60	70,596	10	213,236	30	709,382
1881 - - - - -	139,976	58	26,826	11	76,200	31	243,002
1882 - - - - -	162,992	58	32,242	12	84,132	30	279,366
1883 - - - - -	183,236	57	31,139	10	105,743	33	320,118
1884 - - - - -	147,660	61	21,953	9	72,566	30	242,179
1885 - - - - -	126,260	61	21,367	10	60,017	29	207,644
TOTAL, 1881–85 - - -	760,124	59	133,527	10	398,658	31	1,292,309
1886 - - - - -	146,301	63	25,323	11	61,276	26	232,900
1887 - - - - -	168,221	60	34,365	12	78,901	28	281,487
1888 - - - - -	170,822	61	35,873	13	73,233	26	279,928
1889 - - - - -	163,518	64	25,354	10	64,923	26	253,795
1890 - - - - -	139,979	64	20,653	10	57,484	26	218,116
TOTAL, 1886–90 - - -	788,841	62	141,568	11	335,817	27	1,266,226
1891 - - - - -	137,881	63	22,190	10	58,436	27	218,507
1892 - - - - -	133,815	64	23,325	11	52,902	25	210,042
1893 - - - - -	134,045	64	22,637	11	52,132	25	208,814
1894 - - - - -	99,590	64	14,432	9	42,008	27	156,030
1895 - - - - -	112,538	61	18,294	10	54,349	29	185,181
TOTAL, 1891–95 - - -	617,869	63	100,878	10	259,827	27	978,574
1896 - - - - -	102,837	64	16,866	10	42,222	26	161,925
1897 - - - - -	94,658	65	16,124	11	35,678	24	146,460
1898 - - - - -	90,679	65	15,570	11	34,395	24	140,644
1899 - - - - -	87,400	60	16,072	11	42,890	29	146,362
GRAND TOTAL, 1853–99, (47 Years) - - -	4,572,560	53	875,868	10	3,247,503	37	8,695,931

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XVIII.—STATEMENT showing for ENGLISH, SCOTCH, IRISH, and FOREIGN EMIGRANTS to Places out of *Europe*, and not within the Mediterranean Sea, the Number of Adult Emigrants of each Sex, the Excess of Male over Female Adults, the Number of Children, and the proportion of Children to Total Emigrants, in each of the Years 1886 to 1899.

NATIONALITIES.	Years.	Total Number of Emigrants.	ADULTS.			CHILDREN AND INFANTS.	
			Males.	Females.	Excess of Males over Females.	Total Number.	Proportion of Children to Total Emigrants.
		No.	*No.*	*No.*	*No.*	*No.*	*Per Cent.*
ENGLISH	1886	146,301	78,756	41,495	37,261	26,050	17·8
	1887	168,221	89,275	46,902	42,373	32,044	19·0
	1888	170,822	91,173	48,563	42,610	31,086	18·2
	1889	163,518	89,420	48,319	41,101	25,779	15·8
	1890	139,979	75,781	44,087	31,694	20,111	14·4
	1891	137,881	74,582	43,605	30,977	19,694	14·3
	1892	133,815	72,263	43,169	29,094	18,383	13·7
	1893	134,045	74,822	40,938	33,884	18,285	13·6
	1894	99,590	54,926	31,725	23,201	12,939	13·0
	1895	112,538	62,292	35,875	26,417	14,371	12·8
	1896	102,837	58,811	32,091	26,720	11,935	11·6
	1897	94,658	52,940	30,807	22,133	10,911	11·5
	1898	90,679	50,928	28,781	22,147	10,970	12·1
	1899	87,400	47,776	29,159	18,617	10,465	12·0
SCOTCH	1886	25,323	12,809	7,305	5,504	5,209	20·6
	1887	34,365	17,766	9,288	8,478	7,311	21·3
	1888	35,873	18,143	9,841	8,302	7,889	22·0
	1889	25,354	12,398	7,845	4,553	5,111	20·2
	1890	20,653	9,880	7,043	2,837	3,730	18·1
	1891	22,190	10,919	7,382	3,537	3,889	17·5
	1892	23,325	11,392	7,967	3,425	3,966	17·0
	1893	22,637	11,501	7,148	4,353	3,988	17·6
	1894	14,432	7,194	5,185	2,009	2,053	14·2
	1895	18,294	9,113	6,530	2,583	2,651	14·5
	1896	16,866	8,724	5,704	3,020	2,438	14·5
	1897	16,124	8,395	5,667	2,728	2,062	12·8
	1898	15,570	8,366	5,286	3,080	1,918	12·3
	1899	16,072	8,126	5,709	2,417	2,237	13·9
IRISH	1886	61,276	27,423	26,999	424	6,854	11·2
	1887	78,901	36,757	33,663	3,094	8,481	10·7
	1888	73,233	33,813	31,515	2,298	7,905	10·8
	1889	64,923	29,329	28,655	674	6,939	10·7
	1890	57,484	26,200	25,863	337	5,421	9·4
	1891	58,436	26,655	26,613	42	5,168	8·8
	1892	52,902	24,408	23,897	511	4,597	8·7
	1893	52,132	23,044	24,980	*1,936	4,108	7·9
	1894	42,008	16,511	22,163	*5,652	3,334	7·9
	1895	54,349	21,882	28,584	*6,702	3,883	7·1
	1896	42,222	17,850	21,545	*3,695	2,827	6·7
	1897	35,678	14,238	19,049	*4,811	2,391	6·7
	1898	34,395	13,860	18,242	*4,382	2,293	6·7
	1899	42,890	17,847	22,380	*4,533	2,663	6·2
TOTAL OF BRITISH AND IRISH ORIGIN	1886	232,900	118,988	75,799	43,189	38,113	16·4
	1887	281,487	143,798	89,853	53,945	47,836	17·0
	1888	279,928	143,129	89,919	53,210	46,880	16·7
	1889	253,795	131,147	84,819	46,328	37,829	14·9
	1890	218,116	111,861	76,993	34,868	29,262	13·4
	1891	218,507	112,156	77,600	34,556	28,751	13·2
	1892	210,042	108,063	75,033	33,030	26,946	12·8
	1893	208,814	109,367	73,066	36,301	26,381	12·6
	1894	156,030	78,631	59,073	19,558	18,326	11·7
	1895	185,181	93,287	70,989	22,298	20,905	11·3
	1896	161,925	85,385	59,340	26,045	17,200	10·6
	1897	146,460	75,573	55,523	20,050	15,364	10·5
	1898	140,644	73,154	52,309	20,845	15,181	10·8
	1899	146,362	73,749	57,248	16,501	15,365	10·5
FOREIGNERS	1886	94,370	53,008	25,562	27,446	15,800	16·7
	1887	108,572	63,304	28,660	34,644	16,608	15·8
	1888	113,230	64,548	30,799	33,749	17,883	15·8
	1889	83,466	44,588	24,860	19,728	14,018	16·8
	1890	94,515	50,936	27,772	23,164	15,807	16·7
	1891	112,275	59,815	32,452	27,363	20,008	17·8
	1892	107,351	58,119	30,951	27,168	18,281	17·0
	1893	95,123	53,900	26,031	27,869	15,192	16·0
	1894	67,032	34,265	21,980	12,285	10,787	16·1
	1895	82,818	44,516	27,450	17,066	10,852	13·1
	1896	76,015	43,517	24,990	18,527	7,508	9·9
	1897	62,932	32,625	23,343	9,282	6,964	11·1
	1898	60,551	32,388	20,967	11,421	7,196	11·9
	1899	90,020	49,115	30,136	18,979	10,769	12·0

* Excess of Females over Males.

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COMPARATIVE TABLES, IMMIGRATION.

XIX.—STATEMENT showing the Total Number of BRITISH and IRISH and FOREIGN IMMIGRANTS from Places out of *Europe*, and not within the Mediterranean Sea, landed in the *United Kingdom* in each Year since 1870, the first Year in which the Number was recorded.

YEAR OR PERIOD.	From United States.	From British North America.	From Australasia.	From Cape of Good Hope and Natal.	From all other Places.	TOTAL.
1870	46,505		2,652			49,157
1871	47,726	3,997	1,994	110		53,827
1872	*	*	*	*		70,181
1873	68,536	5,862	2,574	9,444		86,416
1874	100,527	7,791	1,892	7,919		118,129
1875	80,045	6,577	2,108	5,498		94,228
TOTAL, 1871-75 (5 years.)	*	*	*	*		422,781
1876	72,592	7,284	2,761	10,920		93,557
1877	60,825	5,992	4,702	10,329		81,848
1878	54,989	6,401	4,403	12,158		77,951
1879	34,043	3,640	5,294	10,996		53,973
1880	45,488	5,084	6,290	11,454		68,316
TOTAL, 1876-80 (5 years.)	267,937	28,401	23,450	55,857		375,645
1881	51,197	6,199	6,308	13,401		77,105
1882	53,415	6,714	7,318	7,387	7,970	82,804
1883	70,560	7,280	7,155	6,733	8,775	100,503
1884	91,016	9,167	8,694	6,246	8,343	123,466
1885	81,450	10,079	8,272	5,472	8,276	113,549
TOTAL, 1881-85 (5 years.)	347,638	39,439	37,747	72,603		497,427
1886	78,708	7,532	9,366	4,467	8,806	108,879
1887	88,948	7,034	10,592	3,624	8,815	119,013
1888	95,474	9,104	10,632	4,106	9,563	128,879
1889	111,693	9,027	10,637	5,705	10,336	147,398
1890	115,861	10,414	10,385	7,607	11,643	155,910
TOTAL, 1886-90 (5 years.)	490,684	43,111	51,612	25,509	49,163	660,079
1891	112,347	9,598	9,853	6,913	12,658	151,369
1892	103,718	10,323	10,793	7,194	11,719	143,747
1893	100,622	10,593	10,390	7,735	11,714	141,054
1894	145,406	11,472	9,385	7,953	11,583	185,799
1895	130,798	12,134	9,888	9,815	13,039	175,674
TOTAL, 1891-95 (5 years.)	592,891	54,120	50,309	39,610	60,713	797,643
1896	110,076	11,302	9,535	16,126	12,874	159,913
1897	103,995	12,749	7,702	17,722	12,946	155,114
1898	89,439	12,642	7,315	17,070	12,880	139,346
1899	106,561	10,293	7,777	24,260	13,220	162,111

* Cannot be given.

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XX.—STATEMENT showing the Number of BRITISH and IRISH IMMIGRANTS from Places out of *Europe*, and not within the Mediterranean Sea, who landed in the *United Kingdom* in each Year since 1876, the first Year in which the Nationality of the Immigrants was recorded.

YEAR OR PERIOD.	From United States.	From British North America.	From Australasia.	From Cape of Good Hope and Natal.	From all other Places.	TOTAL.
1876	54,697	6,629	2,579	7,499		71,404
1877	44,878	5,687	4,637	8,688		63,890
1878	34,040	6,204	4,207	10,493		54,944
1879	20,048	3,497	4,967	9,424		37,936
1880	26,518	4,688	5,910	9,891		47,007
TOTAL, 1876–80 (5 years.)	180,181	26,705	22,300	45,995		275,181
1881	29,781	5,761	5,877	11,288		52,707
1882	28,468	6,097	6,871	6,499	6,776	54,711
1883	46,703	7,021	6,844	5,913	7,323	73,804
1884	61,466	8,861	8,312	5,460	7,257	91,356
1885	57,604	9,321	7,946	4,574	6,023	85,468
TOTAL, 1881–85 (5 years.)	224,022	37,061	35,850	61,113		358,046
1886	52,909	7,167	8,980	3,842	7,120	80,018
1887	58,343	6,848	10,258	3,086	6,940	85,475
1888	64,031	8,817	10,387	3,481	7,417	94,133
1889	71,392	8,642	10,438	4,869	7,729	103,070
1890	74,740	9,525	10,223	6,507	8,475	109,470
TOTAL, 1886–90 (5 years.)	321,415	40,999	50,286	21,785	37,681	472,166
1891	68,808	9,000	9,712	5,753	9,764	103,037
1892	62,698	9,310	10,606	6,147	9,019	97,780
1893	67,428	9,159	10,198	6,491	8,843	102,119
1894	83,523	10,256	9,106	6,866	8,558	118,309
1895	71,059	10,671	9,608	8,304	9,776	109,418
TOTAL, 1891–95 (5 years.)	353,516	48,396	49,230	33,561	45,960	530,663
1896	59,212	9,539	9,348	14,161	9,482	101,742
1897	53,635	9,940	7,505	14,951	9,190	95,221
1898	50,728	9,794	7,060	14,092	9,574	91,248
1899	53,643	8,395	7,578	20,621	10,009	100,246

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XXI.—STATEMENT showing, since 1870, the Nationality of the IMMIGRANTS who came to the *United Kingdom* from Places out of *Europe* and not within the Mediterranean Sea, and the COUNTRIES whence they came, so far as the same can be given.

NATIONALITIES.	Annual Average, 1870–75 (6 years).	Annual Average, 1876–80 (5 years).	Annual Average, 1881–85 (5 years).	Annual Average, 1886–90 (5 years).	Annual Average, 1891–95 (5 years).	1896.	1897.	1898.	1899.
FROM UNITED STATES.									
British and Irish	*	*36,036*	*44,804*	*64,283*	*70,703*	59,212	53,635	50,728	53,643
Foreigners	*	*17,545*	*23,632*	*33,683*	*47,871*	50,731	50,069	38,253	52,321
Not distinguished	*	*6*	*1,091*	*171*	*4*	133	291	458	597
TOTAL	*	*53,587*	*69,527*	*98,137*	*118,578*	110,076	103,995	89,439	106,561
FROM BRITISH NORTH AMERICA.									
British and Irish	*	*5,341*	*7,412*	*8,200*	*9,679*	9,539	9,940	9,794	8,395
Foreigners	*	*339*	*464*	*422*	*1,136*	1,763	2,809	2,848	1,891
Not distinguished	*	–	*11*	–	*9*	–	–	–	7
TOTAL	*	*5,680*	*7,887*	*8,622*	*10,824*	11,302	12,749	12,642	10,293
FROM AUSTRALASIA.									
British and Irish	*	*4,460*	*7,170*	*10,057*	*9,846*	9,348	7,505	7,060	7,578
Foreigners	*	*230*	*380*	*265*	*206*	187	180	255	199
Not distinguished	*	–	–	–	*10*	–	17	–	–
TOTAL	*	*4,690*	*7,550*	*10,322*	*10,062*	9,535	7,702	7,315	7,777
FROM ALL OTHER PLACES.									
British and Irish	*	*9,199*	*12,223*	*11,893*	*15,904*	23,643	24,141	23,666	30,630
Foreigners	*	*1,938*	*2,062*	*2,062*	*2,874*	3,828	4,936	5,006	5,165
Not distinguished	*	*34*	*236*	*979*	*1,286*	1,529	1,591	1,278	1,685
TOTAL		*11,171*	*14,521*	*14,934*	*20,064*	29,000	30,668	29,950	37,480
FROM ALL PLACES.									
British and Irish	*	*55,036*	*71,609*	*94,433*	*106,132*	101,742	95,221	91,248	100,246
Foreigners	*	*20,052*	*26,538*	*36,432*	*52,087*	56,509	57,994	46,362	59,576
Not distinguished	*	*40*	*1,338*	*1,150*	*1,309*	1,662	1,899	1,736	2,289
GRAND TOTAL	*78,656*	*75,128*	*99,485*	*132,015*	*159,528*	159,913	155,114	139,346	162,111

* Cannot be given.

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XXII.—STATEMENT showing, for BRITISH and IRISH and FOREIGN IMMIGRANTS, from Places out of *Europe*, and not within the Mediterranean Sea, in each of the Years 1880 to 1899, the Number of ADULT IMMIGRANTS of each Sex, the Excess of Male over Female Adults, and the Number of Children compared with the Total Number of Immigrants.

NATIONALITIES.	Years.	Total Number of Immigrants.	ADULTS.			CHILDREN AND INFANTS.	
			Males.	Females.	Excess of Males over Females.	Total Number.	Proportion of Children to Total Immigrants.
		No.	*No.*	*No.*	*No.*	*No.*	*Per Cent.*
BRITISH AND IRISH	1880	47,007	26,007	14,713	11,294	6,287	13·4
	1881	52,707	28,780	16,669	12,111	7,258	13·8
	1882	54,711	30,277	16,317	13,960	8,117	14·8
	1883	73,804	45,928	19,178	26,750	8,698	11·8
	1884	91,356	55,959	24,003	31,956	11,394	12·5
	1885	85,468	49,969	24,365	25,604	11,134	13·0
	1886	80,018	46,842	23,814	23,028	9,362	11·7
	1887	85,475	50,170	25,225	24,945	10,080	11·8
	1888	94,133	56,131	26,737	29,394	11,265	12·0
	1889	103,070	59,154	30,709	28,445	13,207	12·8
	1890	109,470	60,640	33,370	27,270	15,460	14·1
	1891	103,037	55,912	32,868	23,044	14,257	13·8
	1892	97,780	53,022	32,017	21,005	12,741	13·0
	1893	102,119	58,244	31,651	26,593	12,224	12·0
	1894	118,309	62,478	38,705	23,773	17,126	14·5
	1895	109,418	55,676	38,453	17,223	15,289	14·0
	1896	101,742	52,771	34,802	17,969	14,169	13·9
	1897	95,221	49,480	32,201	17,279	13,540	14·2
	1898	91,248	47,115	31,036	16,079	13,097	14·4
	1899	100,246	51,945	34,563	17,382	13,738	13·7
FOREIGNERS	1880	21,309	11,475	7,487	3,988	2,347	11·0
	1881	24,398	13,037	8,273	4,764	3,088	12·7
	1882	22,582	11,992	7,395	4,597	3,195	14·1
	1883	26,699	18,049	6,511	11,538	2,139	8·0
	1884	32,007	21,228	8,008	13,220	2,771	8·7
	1885	27,006	17,483	7,134	10,349	2,389	8·8
	1886	28,474	17,403	8,757	8,646	2,314	8·1
	1887	32,008	20,022	9,282	10,740	2,704	8·4
	1888	33,895	21,685	9,523	12,162	2,687	7·9
	1889	43,122	26,955	12,821	14,134	3,346	7·8
	1890	44,663	27,884	12,944	14,940	3,835	8·6
	1891	47,197	29,999	13,411	16,588	3,787	8·0
	1892	44,673	27,522	13,368	14,154	3,783	8·5
	1893	37,634	24,815	9,525	15,290	3,294	8·8
	1894	66,129	41,519	17,753	23,766	6,857	10·4
	1895	64,803	38,411	19,784	18,627	6,608	10·2
	1896	56,509	33,433	17,636	15,797	5,440	9·6
	1897	57,994	33,813	18,294	15,519	5,887	10·2
	1898	46,362	27,794	13,709	14,085	4,859	10·5
	1899	59,576	32,847	20,714	12,133	6,015	10·1

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BALANCE OF EMIGRATION TO NON-EUROPEAN COUNTRIES.

XXIII.—BALANCE of EMIGRATION, deducting Total Recorded Immigration from Total Recorded Emigration.

YEARS.	Emigration.	Immigration.	Net Emigration.	YEARS.	Emigration.	Immigration.	Net Emigration.
1876 -	138,222	93,557	44,665	1888 -	398,494	128,879	269,615
1877 -	119,971	81,848	38,123	1889 -	342,641	147,398	195,243
1878 -	147,663	77,951	69,712	1890 -	315,980	155,910	160,070
1879 -	217,163	53,973	163,190	1891 -	334,543	151,369	183,174
1880 -	332,294	68,316	263,978	1892 -	321,397	143,747	177,650
1881 -	392,514	77,105	315,409	1893 -	307,633	141,054	166,579
1882 -	413,288	82,804	330,484	1894 -	226,827	185,799	41,028
1883 -	397,157	100,503	296,654	1895 -	271,772	175,674	96,098
1884 -	303,901	123,466	180,435	1896 -	241,952	159,913	82,039
1885 -	264,385	113,549	150,836	1897 -	213,280	155,114	58,166
1886 -	330,801	108,879	221,922	1898 -	205,171	139,346	65,825
1887 -	396,494	119,013	277,481	1899 -	240,696	162,111	78,585

XXIV.—BALANCE of EMIGRATION of PERSONS of *British* and *Irish* Origin only, deducting Recorded Immigration from Recorded Emigration of such Persons.

YEARS.	Emigration.	Immigration.	Net Emigration.	
			Numbers.	Proportion per Cent. of Total Population of United Kingdom
1876 - - - - -	109,469	71,404	38,065	0·11
1877 - - - - -	95,195	63,890	31,305	0·09
1878 - - - - -	112,902	54,944	57,958	0·17
1879 - - - - -	164,274	37,936	126,338	0·37
1880 - - - - -	227,542	47,007	180,535	0·52
1881 - - - - -	243,002	52,707	190,295	0·54
1882 - - - - -	279,366	54,711	224,655	0·64
1883 - - - - -	320,118	73,804	246,314	0·69
1884 - - - - -	242,179	91,356	150,823	0·42
1885 - - - - -	207,644	85,468	122,176	0·34
1886 - - - - -	232,900	80,018	152,882	0·42
1887 - - - - -	281,487	85,475	196,012	0·54
1888 - - - - -	279,928	94,133	185,795	0·50
1889 - - - - -	253,795	103,070	150,725	0·41
1890 - - - - -	218,116	109,470	108,646	0·29
1891 - - - - -	218,507	103,037	115,470	0·31
1892 - - - - -	210,042	97,780	112,262	0·29
1893 - - - - -	208,814	102,119	106,695	0·28
1894 - - - - -	156,030	118,309	37,721	0·10
1895 - - - - -	185,181	109,418	75,763	0·19
1896 - - - - -	161,925	101,742	60,183	0·15
1897 - - - - -	146,460	95,221	51,239	0·13
1898 - - - - -	140,644	91,248	49,396	0·12
1899 - - - - -	146,362	100,246	46,116	0·11

XXV.—DESTINATIONS of EXCESS of EMIGRANTS over IMMIGRANTS, among Persons of *British* and *Irish* Origin only, in the undermentioned Years.

YEARS.	Country of Emigration and Immigration.					
	United States.	British North America.	Australasia.	Cape of Good Hope and Natal.	All other Places.	TOTAL.
1876 - -	**143*	2,706	29,617	5,885		38,065
1877 - -	603	2,033	25,501	3,168		31,305
1878 - -	20,654	4,448	32,272	584		57,958
1879 - -	71,758	14,455	35,992	4,133		126,338
1880 - -	140,052	16,214	18,274	5,995		180,535
1881 - -	146,323	18,151	16,805	9,016		190,295
1882 - -	153,435	34,344	30,418	5,564	894	224,655
1883 - -	144,870	37,164	64,420	**171*	31	246,314
1884 - -	93,814	22,273	35,943	**1,506*	299	150,823
1885 - -	80,083	10,517	31,449	**1,306*	1,433	122,176
1886 - -	99,801	17,578	34,096	55	1,352	152,882
1887 - -	143,183	25,177	23,925	1,823	1,904	196,012
1888 - -	131,955	26,036	20,740	2,985	4,079	185,795
1889 - -	97,379	19,627	17,856	9,015	6,848	150,725
1890 - -	77,673	12,995	10,956	3,814	3,208	108,646
1891 - -	87,587	12,578	9,835	3,337	2,133	115,470
1892 - -	87,341	13,944	5,344	3,744	1,889	112,262
1893 - -	81,521	15,573	1,005	6,606	1,990	106,695
1894 - -	20,478	7,203	1,811	6,311	1,918	37,721
1895 - -	55,443	5,951	959	11,930	1,480	75,763
1896 - -	39,709	5,728	1,006	10,433	3,307	60,183
1897 - -	31,689	5,631	4,556	6,158	3,205	51,239
1898 - -	29,766	7,846	3,633	5,664	2,487	49,396
1899 - -	38,839	8,015	3,889	**6,189*	1,562	46,116

* Excess of Immigrants.

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STATISTICAL TABLES.—PART II.

SUMMARY STATEMENT OF THE PASSENGER MOVEMENT BETWEEN THE UNITED KINGDOM AND CONTINENTAL PORTS.

I.—STATEMENT of the Number of PASSENGERS of all Nationalities who embarked at Ports of the *United Kingdom* for Continental Ports, and of the Number of Passengers of all Nationalities who arrived at Ports of the *United Kingdom* from Continental Ports in the Year 1899, so far as can be ascertained.

Conveyed by	All European Ports not situated on the Mediterranean or Black Seas.	All Ports on the Mediterranean and Black Seas.	TOTAL.
	INWARDS.		
Principal Passenger Shipping Companies - - -	197,514	6,853	204,367
Belgian State Mail Packets (Dover and Ostend) -	62,064	—	62,064
Railway Companies - - - - - - - -	399,799	—	399,799
TOTAL, 1899 - - -	659,377	6,853	666,230
Corresponding figures for 1898 - - -	*614,026*	*6,097*	*620,123*
	OUTWARDS.		
Principal Passenger Shipping Companies - - -	147,670	7,099	154,769
Belgian State Mail Packets (Dover and Ostend) -	61,947	—	61,947
Railway Companies - - - - - - - -	392,854	—	392,854
TOTAL, 1899 - - -	602,471	7,099	609,750
Corresponding figures for 1898 - - -	*583,039*	*7,187*	*590,226*

Note.—The above Table is compiled from Returns voluntarily furnished to the Board of Trade by the principal English passenger shipping companies, English railway companies carrying passengers to and from the Continent, the Belgian Government, and some foreign shipping companies having agencies in this country.

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ALIEN IMMIGRATION FROM

II.—STATEMENT of the Number of ALIENS who arrived in the *United Kingdom*† from the
to be *en route* to *America* or other Places, (*b*) those *en route*
(Compiled from the Alien Lists received by

	Amsterdam.	Antwerp.	Boulogne.	Bremen and Bremer-haven.	Calais.	Copenhagen.	Dieppe.	Dunkirk.	Esbjerg.	Faröe Islands and Iceland.
(*a*) ALIENS not stated to be *en route* to AMERICA or other Places out of the UNITED KINGDOM.										
London :										
Adults - - -	671	134	281	5,270	48	78	–	51	–	–
Children - - -	45	2	5	790	5	3	–	7	–	
Seamen - - -	70	73	5	276	25	36	–	55	–	
TOTAL - - -	786	209	291	6,336	78	117	–	113	–	
Grimsby :										
Adults - - -	–	192	–	–	–	–	–	–	180	1
Children - - -	–	35	–	–	–	–	–	–	20	
Seamen - - -	–	21	–		–	–	5	–	155	1
TOTAL - - -	–	248	–	–		–	5	–	355	2
Hull :										
Adults - - -	64	45	11	638	–	53	–	9	–	2
Children - - -	12	1	–	95	–	4	–	–	–	3
Seamen - - -	117	1	18	204	–	55	–	69	–	5
TOTAL - - -	193	47	29	937	–	112	–	78	–	10
Hartlepool, West :										
Adults - - -	1	–	–	–	–	–	–	–	–	
Children - - -	–	–	–	–	–	–	–	–	–	–
Seamen - - -	–	–	–	–	–	–	–	–	–	–
TOTAL - - -	1	–	–	–	–	–	–	–	–	
Tyne Ports :										
Adults - - -	2	40	–	1	–	245	–	–	–	4
Children - - -	–	–	–	–	–	14	–	–	–	–
Seamen - - -	–	62	–	4	–	510	1	14	–	2
TOTAL - - -	2	102	–	5	–	769	1	14	–	6
Leith and Grangemouth :										
Adults - - -	44	413	–	4	6	80	–	9	–	172
Children - - -	–	52	–	–	–	2	–	–	–	59
Seamen - - -	1	15	–	35	2	94	–	24	–	79
TOTAL - - -	45	480	–	39	8	176	–	33	–	310

* Including all Mediterranean and Black Sea Ports.

† The Ports at which Alien Lists were received were Aberdeen, Belfast, Blyth, Bristol, Dover, Dublin, Folkestone, Glasgow, Gool Newhaven, North Shields, South Shields, Southampton, Sunderland, and West Hartlepool. The Lists received from Dove as third-class passengers.

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EUROPEAN PORTS* IN 1899.

mdermentioned Continental Ports* in the Year 1899, showing separately (*a*) those not stated
o *America* or other Places, and (*c*) the Total Number arrived.
he Customs under Act 6 Will. 4, c. 11, s. 2.)

Gothenburg.	Hamburg.	Hango and Helsingfors.	Havre.	Libau.	Malmo, Landscrona, and Helsingborg.	Norwegian Ports.		Ostend.	Rotterdam.	Other Ports.	TOTAL.
						Christiania, Arendal, and Christiansand.	Other Norwegian Ports.				
(*a*) ALIENS not stated to be *en route* to AMERICA or other Places out of the UNITED KINGDOM.											
926	6,665	–	2	1,882	–	116	88	784	3,536	551	21,083
39	928	–	–	1,080	–	14	5	5	487	91	3,506
527	279	4	–	4	–	169	56	32	374	260	2,245
1,492	7,872	4	2	2,966	–	299	149	821	4,397	902	26,834
13	4,039	–	–	–	21		13	–	162	2	4,623
–	585	–	–	–	–		–	–	32	–	672
152	306	–	–	–	49		2	–	38	11	740
165	4,930	–	–	–	70	–	15	–	232	13	6,035
160	205	256	–	87	1	304	68	–	280	89	2,272
1	7	28	–	63	–	6	1	–	15	10	246
27	54	461	–	–	–	530	280	–	115	79	2,225
38	266	745	–	150	1	840	349	–	410	178	4,743
8	75	–	–	–	–	–	1	–	3	8	96
	10	–	–	–	–		–	–	–	–	10
34	289	–	–	–	–	–	1	–	1	13	338
42	374	–	–	–	–	–	2	–	4	21	444
42	105	114	–	–	–	490	533	–	144	217	1,937
1	10	29	–	–	–	63	32	–	10	10	169
306	164	84	–	–	2	1,653	1,513	–	351	241	4,807
349	279	227	–	–	2	2,206	2,078	–	505	468	6,913
–	364	–	–	1	–	278	6	–	229	92	1,698
	23	–	–	–	–	41	2	–	14	4	197
1	97	–	–	5	–	697	20	–	76	30	1,176
1	484	–	–	6	–	1,016	28	–	319	126	3,071

Leith, Granton, Greenock, Grimsby, Harwich, Hull, Kirkcaldy, Leith, Liverpool, London, Middlesbrough, Newcastle, Queenstone, Harwich, Newhaven, and Southampton show only deck passengers, and persons who, after landing, proceed by train

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II.—STATEMENT of the Number of ALIENS who arrived in the *United Kingdom** from the
to be *en route* to *America* or other Places, (*b*) those *en route* to *America*
(Compiled from the Alien Lists received by

——	Amsterdam.	Antwerp.	Boulogne.	Bremen and Bremer-haven.	Calais.	Copenhagen.	Dieppe.	Dunkirk.	Esbjerg.	Faröe Islands and Iceland.
(*a*) ALIENS not stated to be *en route* to AMERICA or other Places out of the UNITED KINGDOM—*continued.*										
Newhaven:										
Adults	–	–	–	–	–	–	9,542	–	–	–
Children	–	–	–	–	–	–	337	–	–	–
Seamen	–	–	–	–	–	–	299	–	–	–
TOTAL	–	–	–	–	–	–	10,178	–	–	–
Other Ports:										
Adults	49	23	380	20	628	1	–	1	1,426	13
Children	–	–	5	–	6	–	–	–	58	–
Seamen	2	6	–	80	52	1	1	7	277	5
TOTAL	51	29	385	100	686	2	1	8	1,761	18
TOTAL:										
Adults	831	847	672	5,933	682	457	9,542	70	1,606	192
Children	57	90	10	885	11	23	337	7	78	62
Seamen	190	178	23	599	79	696	306	169	432	92
TOTAL	1,078	1,115	705	7,417	772	1,176	10,185	246	2,116	346
(*b*) ALIENS *en route* to AMERICA, or other Places out of the UNITED KINGDOM.										
London	–	–	–	–	–	–	–	–	–	–
Grimsby	–	319	–	–	–	–	–	–	1,565	–
Hull	49	4	–	1,549	6	1,086	–	8	–	–
Hartlepool, West	–	–	–	–	–	–	–	–	–	–
Tyne Ports	–	–	–	–	–	51	–		–	–
Leith and Grangemouth	–	56	–	–	–	263	–	–	–	84
Newhaven	–	–	–	–	–	–	–	–	–	–
Other Ports	2	–	–	14	–	–	–	–	3,732	–
TOTAL	51	379	–	1,563	6	1,400	–	8	5,297	84
(*c*) TOTAL Number of ALIENS arrived.										
London	786	209	291	6,336	78	117	–	113	–	–
Grimsby	–	567	–	–	–	–	5	–	1,920	2
Hull	242	51	29	2,486	6	1,198	–	86	–	10
Hartlepool, West	1	–	–	–	–	–	–	–	–	–
Tyne Ports	2	102	–	5	–	820	1	14	–	6
Leith and Grangemouth	45	536	–	39	8	439	–	33	–	394
Newhaven	–	–	–	–	–	–	10,178	–	–	–
Other Ports	53	29	385	114	686	2	1	8	5,493	18
TOTAL	1,129	1,494	705	8,980	778	2,576	10,185	254	7,413	430

* The Ports at which Alien Lists were received were Aberdeen, Belfast, Blyth, Bristol, Dover, Dublin, Folkestone, Glasgow, Newhaven, North Shields, South Shields, Southampton, Sunderland, and West Hartlepool. The Lists received from Dover, as third-class passengers.

‡ For the destinations of these aliens, and of the aliens ascertained from information supplied to Her Majesty's Consuls a to officers of Her Majesty's Customs to be *en route* to places out of the United Kingdom, *see* Table VI.

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undermentioned Continental Ports† in the Year 1899, showing separately (*a*) those not stated
r other Places, and (*c*) the Total Number arrived—*continued.*
the Customs under Act 6 Will. 4, c. 11, s. 2.)

Gothenburg.	Hamburg.	Hango and Helsingfors.	Havre.	Libau.	Malmo, Landscrona, and Helsingborg.	Norwegian Ports.		Ostend.	Rotterdam.	Other Ports.	TOTAL.
						Christiania, Arendal, and Christiansand.	Other Norwegian Ports.				
(*a*) ALIENS not stated to be *en route* to AMERICA or other Places out of the UNITED KINGDOM—*continued.*											
-		-	-	-	-	-	-	-	-	12	9,554
-	-	-	-	-	-	-	-	-	-	-	337
-	-	-	-	-	-	-	-	-	-	2	301
-		-	-	-	-	-	-	-	-	14	10,192
215	31	-	91	-	-	-	8	928	52	505	4,371
8	2	-	4	-	-	-	-	14	-	16	113
143	27	-	318	-	-	1	2	11	20	577	1,530
366	60	-	413	-	-	1	10	953	72	1,098	6,014
1,364	11,484	370	93	1,970	22	1,188	717	1,712	4,406	1,476	45,634
49	1,565	57	4	1,143	-	124	40	19	558	131	5,250
1,300	1,216	549	318	9	51	3,050	1,874	43	975	1,213	13,362
2,713	14,265	976	415	3,122	73	4,362	2,631	1,774	5,939	2,820	64,246
(*b*) ALIENS *en route* to AMERICA, or other Places out of the UNITED KINGDOM.											
-	-	-	-	-	-	6	-	-	-	-	6
6,056	167	-	-	-	69	-	-	-	2,614	2	10,792
7,305	23	12,550	-	1,331	1	3,478	3,152	-	25	132	30,699
3	-	-	-	-	-	-	-	-	-	1	4
7	-	982	-	-	-	342	1,613	-	1	2	2,998
-	-	-	-	-	-	100	-	-	637	-	1,140
-	-	-	-	-	-	-	-	-	-	-	-
44	1	-	504	-	-	-	-	-	2	9	4,308
9,415	191	13,532	504	1,331	70	3,926	4,765	-	3,279	146	‡49,947
(*c*) TOTAL number of ALIENS arrived.											
492	7,872	4	2	2,966	-	305	149	821	4,397	902	26,840
21	5,097	-	-	-	139	-	15	-	2,846	15	16,827
8	289	13,295	-	1,481	2	4,318	3,501	-	435	310	35,442
5	374	-	-	-	-	-	2	-	4	22	448
56	279	1,209	-	-	2	2,548	3,691	-	506	470	9,911
1	484	-	-	6	-	1,116	28	-	956	126	4,211
-	-	-	-	-	-	-	-	-	-	14	10,192
[illegible]	61	-	917	-	-	1	10	953	74	1,107	10,322
[illegible]	14,456	14,508	919	4,453	143	8,288	7,396	1,774	9,218	2,966	114,193

[illegible], Grangemouth, Granton, Greenock, Grimsby, Harwich, Hull, Kirkcaldy, Leith, Liverpool, London, Middlesbrough, Newcastle, [illegible]stone, Harwich, Newhaven, and Southampton, show only deck passengers, and persons who, after landing, proceed by train [illegible]cluding all Mediterranean and Black Sea Ports.

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III.—NATIONALITY of the ALIENS (exclusive of SEAMEN) who arrived in the *United Kingdom en route* to places abroad. (Compiled from the Alien Lists

Total Number arrived not stated to be *en route* to places abroad - - - 64,246
Deduct Seamen, as in Table II. - - - 13,362
NET TOTAL - - - 50,884

NATIONALITIES.	FROM HAMBURG.			FROM BREMEN AND BREMERHAVEN.			FROM DANISH PORTS.			FROM NORWEGIAN AND SWEDISH PORTS.		
	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.
LONDON.												
Russians and Poles	3,598	1,290	795	2,856	1,045	613	14	6	1	14	2	2
Norwegians, Swedes, and Danes.	48	5	–	10	–	–	36	15	2	519	556	58
Germans	702	219	46	450	231	64	6	1	–	11	–	–
Dutch	3	–	–	–	–	–	–	–	–	–	–	–
Belgians	1	–	–	–	–	–	–	–		–	–	–
French	5	1	–	1	–	–	–	–	–	3	3	–
Austrians and Hungarians	461	144	65	384	171	94	–	–	–	11	–	–
Italians	20	–	–	2	–	–	–	–	–	5	–	–
Swiss	9	1	–	2	–	–	–	–	–	1	–	–
Other Nationalities	124	34	22	84	34	19	–	–	–	14	5	–
TOTAL	4,971	1,694	928	3,789	1,481	790	56	22	3	578	566	60
GRIMSBY.												
Russians and Poles	2,162	996	472	–	–	–	–	–	–	–	–	–
Norwegians, Swedes, and Danes.	14	–	–	–	–	–	95	69	18	18	29	–
Germans	332	180	55	–	–	–	14	1	2	–	–	–
Dutch	–	2	–	–	–	–	–	–	–	–	–	–
Belgians	1	–	–	–	–	–	–		–	–	–	–
French	3	1	–	–	–	–	–	–	–		–	–
Austrians and Hungarians	200	122	50	–	–	–	1		–		–	–
Italians	3	–	–	–	–	–	–	–	–	–	–	–
Swiss	3	–	–	–	–	–	–	–	–	–	–	–
Other Nationalities	14	6	8	–	–	–	–	–	–	–	–	–
TOTAL	2,732	1,307	585	–	–	–	110	70	20	18	29	–
HULL.												
Russians and Poles	43	5	–	357	137	71	6	2	1	7	1	–
Norwegians, Swedes, and Danes.	3	1	–	2	–	–	30	10	3	285	223	6
Germans	89	36	7	31	33	11	1	–	–	9	1	–
Dutch	1	–	–	–	–	–	–	–	–	–	–	–
Belgians	–	–	–	–	–	–	–	–	–	1	1	–
French	–	–	–	–	–	–	–	–	–	–	–	–
Austrians and Hungarians	20	–	–	32	19	8	–	–	–	–	–	–
Italians	–	–	–	1	–	–	–	–	–	4	2	2
Swiss	–	–	–	–	–	–	–	–	–	1	–	–
Other Nationalities	6	1	–	15	11	5	2	2	–	1	–	–
TOTAL	162	43	7	438	200	95	39	14	4	308	228	8

* Including all Mediterranean and Black Sea Ports.

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from Continental Ports,* in the Year 1899, and who were not stated on the Alien Lists to be received by the Customs under Act 6 Will. 4, c. 11, s. 2.)

FROM AMSTERDAM, ANTWERP, AND ROTTERDAM.			FROM DIEPPE.			FROM OTHER PORTS.			TOTAL.			
Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	TOTAL.
902	350	273	–	–	–	†955	†1,076	†1,135	8,339	3,769	2,819	14,927
7	7	–	–	–	–	14	10	2	634	593	62	1,289
834	228	75	–	–	–	118	30	1	2,121	709	186	3,016
892	405	139	–	–	–	49	2	–	944	407	139	1,490
34	13	2	–	–	–	401	118	4	436	131	6	573
13	4	–	–	–	–	299	188	15	321	196	15	532
332	108	29	–	–	–	18	4	3	1,206	427	191	1,824
12	–	–	–	–	–	58	16	5	97	16	5	118
7	1	–	–	–	–	17	3	–	36	5	–	41
146	46	16	–	–	–	162	47	26	530	136	83	§779
3,179	1,162	534	–	–	–	2,091	1,494	1,191	14,664	6,419	3,506	24,589
29	9	3	–	–	–	–	–	–	2,191	1,005	475	3,671
1	–	–	–	–	–	–	1	–	128	99	18	245
24	12	8	–	–	–	–	1	–	370	194	65	629
79	24	25	–	–	–	–	–	–	79	26	25	130
12	3	3	–	–	–	–	–	–	13	3	3	19
2	–	–	–	–	–	–	–	–	5	1	–	6
2	4	–	–	–	–	–	–	–	203	126	50	379
127	22	28	–	–	–	–	–	–	130	22	28	180
2	–	–	–	–	–	–	–	–	5	–	–	5
2	–	–	–	–	–	1	–	–	17	6	8	31
280	74	67	–	–	–	1	2	–	3,141	1,482	672	5,295
12	5	–	–	–	–	‡218	‡154	‡96	643	304	168	1,115
2	2	–	–	–	–	7	4	3	329	240	12	581
142	27	2	–	–	–	8	2	–	280	99	20	399
126	25	20	–	–	–	13	4	2	140	29	22	191
3	5	–	–	–	–	11	2	–	15	8	–	23
–	–	–	–	–	–	14	7	–	14	7	–	21
9	3	5	–	–	–	1	–	–	62	22	13	97
17	3	1	–	–	–	–	–	–	22	5	3	30
1	–	–	–	–	–	–	–	–	2	–	–	2
5	2	–	–		–	4	2	3	33	18	8	59
317	72	28	–	–	–	276	175	104	1,540	732	246	2,518

† Of these, 849 men, 1,032 women, and 1,080 children arrived from Libau.
‡ Of these, 36 men, 51 women, and 63 children arrived from Libau; and 152 men, 94 women, and 28 children from Hango, and Helsingfors.
§ Of these, 298 were Roumanians.

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III.—NATIONALITY of the ALIENS (exclusive of SEAMEN) who arrived in the *United Kingdom en route* to places

NATIONALITIES.	FROM HAMBURG.			FROM BREMEN AND BREMERHAVEN.			FROM DANISH PORTS.			FROM NORWEGIAN AND SWEDISH PORTS.		
	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.
HARTLEPOOL, WEST.												
Russians and Poles	1	–	–	–	–	–	–	–	–	–	–	–
Norwegians, Swedes, and Danes	2	1	–	–	–	–	–	–	–	8	6	–
Germans	32	34	10	–		–	–	–	–	–	–	–
Dutch	–	–	–	–	–	–	–	–	–	–	–	–
Belgians		–	–	–	–	–	–	–	–	–	–	–
French	–	–	–	–	–	–	–	–	–		–	–
Austrians and Hungarians	3	–	–	–	–	–	–	–		–	–	–
Italians	1	–	–	–	–	–	–	–	–	–	–	–
Swiss	–	–	–	–	–	–	–	–	–	–	–	–
Other Nationalities	1	–	–	–	–	–	–	–	–	–	–	–
TOTAL	40	35	10	–	–	–	–	–	–	8	6	–
TYNE PORTS.												
Russians and Poles	9	4	–	–	–	–	–	–	–	–	–	–
Norwegians, Swedes, and Danes	4	1	–	–	–	–	147	140	18	486	547	96
Germans	32	54	10	1	–	–	6	1	–	12	3	–
Dutch	–	–	–	–	–	–	–	–	–	–	–	–
Belgians	–	–	–	–		–	–	–	–	–	–	–
French	–	–	–	–		–	–	–	–	8	2	–
Austrians and Hungarians	1	–	–	–	–	–	–	–	–	–	–	–
Italians	–	–	–	–	–	–	–		–	–	–	–
Swiss	–	–	–	–	–	–	–	–	–	–	–	–
Other Nationalities	–	–	–	–	–	–	1	–	1	6	5	–
TOTAL	46	59	10	1	–	–	154	141	19	512	557	96
LEITH AND GRANGEMOUTH:												
Russians and Poles	1	–	–	–	–	–	1	–	–	5	3	–
Norwegians, Swedes, and Danes	–	1	–	–	–	–	63	37	5	105	160	43
Germans	197	157	23	4	–	–	–	–	–	2	–	–
Dutch	–	–	–	–	–	–	–	–	–	1	–	–
Belgians	–	–	–	–	–	–	–	–	–	–	–	–
French	–	–	–	–	–	–	–	–	–	–	–	–
Austrians and Hungarians	3	–	–	–	–	–	1		–	–	–	–
Italians	–	–	–	–	–	–	–		–	–	–	–
Swiss	–	–	–	–	–	–	–	–	–	–	–	–
Other Nationalities	5	–	–	–	–	–	–	–	–	4	4	–
TOTAL	206	158	23	4	–	–	65	37	5	117	167	43

* Including all Mediterranean and Black Sea Ports.

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from Continental Ports,* in the Year 1899, and who were not stated on the alien lists to be abroad.—*continued.*

From Amsterdam, Antwerp, and Rotterdam.			From Dieppe.			From Other Ports.			TOTAL.			
Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Total.
-	-	-	-	-	-	2	1	-	3	1	-	4
-	3	-	-	-	-	-	-	-	10	10	-	20
-	-	-	-	-	-	-	-	-	32	34	10	76
1	-	-	-	-	-	-	-	-	1	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	3	-	-	3
-	-	-	-	-	-	-	-	-	1	-	-	1
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	1	-	-	1
1	3	-	-	-	-	2	1	-	51	45	10	106
3	4	-	-	-	-	75	36	28	87	44	28	159
2	3	-	-	-	-	2	3	-	641	694	114	1,449
65	35	7	-	-	-	2	2	1	118	95	18	231
24	13	3	-	-	-	1	-	-	25	13	3	41
12	7	-	-	-	-	-	-	-	12	7	-	19
5	1	-	-	-	-	146		-	159	3	-	162
1	-	-	-	-	-	-		-	2	-	-	2
2	-	-	-	-	-	2	-	-	4	-	-	4
1	-	-	-	-	-	-	-	-	1	-	-	1
8	-	-	-		-	11	1	5	26	6	6	38
123	63	10	-	-		239	42	34	1,075	862	169	2,106
8	5	2	-	-	-	3	2	-	18	10	2	30
-	1	-	-	-	-	15	7	-	183	206	48	437
147	23	17	-	-	-	13	1	-	363	181	40	584
71	29	3	-	-	-	13	3	-	85	32	3	120
18	8	6	-	-	-	2	1	-	20	9	6	35
8	1	-	-	-	-	47	5	1	55	6	1	62
5	-	-	-	-	-	-	-	-	9	-	-	9
322	30	38	-	-	-	2	2	-	324	32	38	394
7	-	-	-	-	-	-	-	-	7	-	-	7
3	-	-	-	-	-	78	64	59	90	68	59	217
589	97	66	-	-	-	173	85	60	1,154	544	197	1,895

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III.—NATIONALITY of the ALIENS (exclusive of SEAMEN) who arrived in the *United Kingdom en route* to places

NATIONALITIES.	FROM HAMBURG.			FROM BREMEN AND BREMERHAVEN.			FROM DANISH PORTS.			FROM NORWEGIAN AND SWEDISH PORTS.		
	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.
NEWHAVEN.												
Russians and Poles	–	–	–	–	–	–	–	–	–	–	–	–
Norwegians, Swedes, and Danes	–	–	–	–	–	–	–	–	–	–	–	–
Germans	–	–	–	–	–	–	–	–	–	–	–	–
Dutch	–	–	–	–	–	–	–	–	–	–	–	–
Belgians	–	–	–	–	–	–	–	–	–	–	–	–
French	–	–	–	–	–	–	–	–	–	–	–	–
Austrians and Hungarians	–	–	–	–	–	–	–	–	–	–	–	–
Italians	–	–	–	–	–	–	–	–	–	–	–	–
Swiss	–	–	–	–	–	–	–	–	–	–	–	–
Other Nationalities	–	–	–	–	–	–	–	–	–	–	–	–
TOTAL	–	–	–	–	–	–	–	–	–	–	–	–
OTHER PORTS.												
Russians and Poles	8	1	–	–	–	–	12	5	–	1	1	–
Norwegians, Swedes, and Danes	–	–	–	–	–	–	945	385	56	103	112	8
Germans	13	6	2	13	5	–	37	13	1	1	3	–
Dutch	–	–	–	–	–	–	–	–	–	1	–	–
Belgians	–	–	–	–	–	–	–	1	–	1	–	–
French	–	–	–	–	–	–	–	–	–	–	–	–
Austrians and Hungarians	2	–	–	1	–	–	5	–	–	–	–	–
Italians	1	–	–	–	–	–	–	–	–	1	1	–
Swiss	–	–	–	–	–	–	–	2	–	–	–	–
Other Nationalities	–	–	–	1	–	–	14	9	1	1	–	–
TOTAL	24	7	2	15	5	–	1,013	415	58	109	117	8
ALL PORTS.												
Russians and Poles	5,822	2,296	1,267	3,213	1,182	684	33	13	2	27	7	2
Norwegians, Swedes, and Danes	71	9	–	12	–	–	1,316	656	102	1,524	1,633	211
Germans	1,397	686	153	499	269	75	64	16	3	35	7	–
Dutch	4	2	–	–	–	–	–	–	–	2	–	–
Belgians	2	–	–	–	–	–	–	1	–	2	1	–
French	8	2	–	1	–	–	–	–	–	11	5	–
Austrians and Hungarians	690	266	115	417	190	102	7	–	–	11	–	–
Italians	25	–	–	3	–	–	–	–	–	10	3	2
Swiss	12	1	–	2	–	–	–	2	–	2	–	–
Other Nationalities	150	41	30	100	45	24	17	11	2	26	14	–
TOTAL	8,181	3,303	1,565	4,247	1,686	885	1,437	699	109	1,650	1,670	215

NOTE.—Of the 50,884 Aliens included in this Table it was ascertained from information supplied to Her Majesty's Consuls and to Officers of Her Majesty's Customs that 2,889 were *en route* to places abroad, though the fact was not stated on the Alien Lists.

* Including all Mediterranean and Black Sea Ports.

† Of these, 886 men, 1,083 women, and 1,143 children arrived from Libau; and 227 men, 130 women, and 56 children from Hangö and Helsingfors.

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from Continental Ports,* in the Year 1899, and who were not stated on the Alien Lists to be abroad.—*continued.*

From Amsterdam, Antwerp, and Rotterdam.			From Dieppe.			From Other Ports.			Total.			
Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Men.	Women.	Children.	Total.
-	-	-	185	56	35	-	-	-	185	56	35	276
-	-	-	25	1	-	-	-	-	25	1	-	26
-	-	-	467	88	6	-	-	-	467	88	6	561
	-	-	17	-	1	-	-	-	17	-	1	18
-	-	-	19	2	-	-	-	-	19	2	-	21
	-	-	2,190	1,197	49	11	1	-	2,201	1,198	49	3,448
-	-	-	149	11	6	-	-	-	149	11	6	166
-	-	-	3,289	810	218	-	-	-	3,289	810	218	4,317
-	-	-	270	102	1	-	-	-	270	102	1	373
-		-	566	98	21	-	-	-	566	98	21	685
-		-	7,177	2,365	337	11	1	-	7,188	2,366	337	9,891
1	-		-	-	-	30	22	3	52	29	3	84
5	1	-	-	-	-	28	5	-	1,081	503	64	1,648
19	2	-	-	-	-	254	54	7	337	83	10	430
82	3		-	-	-	23	4	1	106	7	1	114
6	2	-	-	-	-	240	89	3	247	92	3	342
1	-	-	-	-	-	440	187	2	441	187	2	630
-	-	-	-	-	-	52	8	-	60	8	-	68
1	-	-	-	-	-	431	66	8	434	67	8	509
1	-	-	-	-	-	83	13	-	84	15	-	99
-	-	-	-	-	-	382	131	21	398	140	22	560
116	8	-	-	-	-	1,963	579	45	3,240	1,131	113	4,484
955	373	278	185	56	35	† 1,283	† 1,291	† 1,262	11,518	5,218	3,530	20,266
17	17	-	25	1	-	66	30	5	3,031	2,346	318	5,695
1,231	327	109	467	88	6	395	90	9	4,088	1,483	355	5,926
1,275	499	190	17	-	1	99	13	3	1,397	514	194	2,105
85	38	11	19	2	-	654	210	7	762	252	18	1,032
29	6	-	2,190	1,197	49	‡ 957	‡388	18	3,196	1,598	67	4,861
349	115	34	149	11	6	71	12	3	1,694	594	260	2,548
481	55	67	3,289	810	218	493	84	13	4,301	952	300	5,553
19	1	-	270	102	1	100	16	-	405	122	1	528
164	48	16	566	98	21	638	245	114	1,661	502	207	¶ 2,370
4,605	1,479	705	7,177	2,365	337	4,756	2,379	1,434	32,053	13,581	5,250	§ 50,884

‡ Of these, 273 men arrived from Roscoff and 37 men from Bordeaux.
§ Seamen are omitted from this Table, the total of which consequently differs from the total of Table IV.
¶ Of these, 384 were Roumanians.

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IV.—Comparative Statement showing the Number of Aliens who arrived at certain Ports shown in the Alien Lists

Note.—*Seamen are included in this Table.*

Month.	London.					Hull.				
	1899.	1898.	1897.	1896.	1895.	1899.	1898.	1897.	1896.	1895.
	Aliens not stated to be *en route* to America or other Places out of the United Kingdom.									
January	1,233	1,179	1,036	948	729	306	320	236	302	255
February	1,363	1,312	949	1,048	497	382	357	224	325	123
March	1,534	1,585	1,671	1,153	967	333	516	339	425	293
April	1,722	1,244	1,207	1,216	731	426	411	272	307	314
May	2,788	2,540	2,261	1,693	1,727	373	403	331	370	338
June	3,119	2,239	2,201	2,262	1,393	409	308	392	382	341
July	2,982	2,654	2,657	2,048	1,969	383	451	428	365	447
August	3,405	2,600	2,435	2,446	1,992	440	435	402	422	431
September	2,443	2,522	2,495	1,795	1,711	345	426	395	266	406
October	2,544	1,810	1,285	1,718	1,076	480	374	254	352	249
November	2,153	2,018	1,899	1,623	1,505	431	291	306	325	333
December	1,548	1,386	1,599	1,001	1,061	435	380	297	226	213
Total	26,834	23,089	21,695	18,951	15,358	4,743	4,672	3,876	4,067	3,743
	§ Aliens *en route* to America or other Places out of the United Kingdom.									
January	–	33	6	4	1	552	486	434	744	832
February	–	9	2	1	6	818	884	536	922	781
March	–	138	–	58	6	2,161	2,081	1,875	3,409	1,968
April	6	118	3	–	2	3,893	2,119	2,081	3,768	3,118
May	–	21	–	1	21	3,624	1,925	2,653	3,198	2,568
June	–	14	29	11	10	3,709	1,384	1,470	2,603	2,126
July	–	–	36	31	23	2,627	1,249	1,139	1,576	2,392
August	–	–	–	106	8	2,863	1,668	1,835	1,714	2,220
September	–	–	1	85	11	3,370	2,287	1,822	1,906	3,465
October	–	–	–	40	19	2,924	1,696	952	1,132	1,660
November	–	1	–	–	23	2,368	963	956	847	1,510
December	–	–	–	1	11	1,790	589	649	388	736
Total	6	334	77	338	141	30,699	17,331	16,402	22,207	23,376

* Including all Mediterranean and Black Sea Ports.

§ In addition to the number of aliens stated on the Alien Lists to have been *en route* to places out of the United Kingdom, it was ascertained from information supplied to Her Majesty's Consuls and to officers of Her Majesty's Customs that 2,074 were on their way to places out of the United Kingdom in 1895, 2,961 in 1896, 2,676 in 1897, 2,336 in 1898, and 2,889 in 1899. For the destinations of aliens ascertained to have arrived *en route* to places out of the United Kingdom, *see* Table VI.

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of the *United Kingdom*, from Continental Ports,* in each Month of the Years 1895 to 1899, as obtained under Act 6, Will. 4, c. 11.

NOTE.—*Seamen are included in this Table.*

Other Ports.					Total.					Month.
1899.	1898.	1897.	1896.	1895.	1899.	1898.	1897.	1896.	1895.	
Aliens not stated to be *en route* to America or other Places out of the United Kingdom.										
2,120	1,475	1,308	1,244	1,120	3,659	2,974	2,580	2,494	2,104	January.
1,954	1,460	1,528	1,298	870	3,699	3,129	2,701	2,671	1,490	February.
2,677	2,503	2,261	2,238	1,699	4,544	4,604	4,271	3,816	2,959	March.
3,025	2,238	2,614	2,316	2,225	5,173	3,893	4,093	3,839	3,270	April.
3,102	2,662	2,348	2,212	2,156	6,263	5,605	4,940	4,275	4,221	May.
3,089	2,047	2,112	2,043	1,890	6,617	4,594	4,705	4,687	3,624	June.
3,071	2,410	2,297	2,367	2,284	6,436	5,515	5,382	4,780	4,700	July.
3,284	2,214	2,345	2,303	2,081	7,129	5,249	5,182	5,171	4,504	August.
2,831	2,223	2,056	1,940	2,491	5,619	5,171	4,946	4,001	4,608	September.
3,133	2,411	2,031	1,924	1,754	6,157	4,595	3,570	3,994	3,079	October.
2,432	2,015	1,810	1,647	1,441	5,016	4,324	4,015	3,595	3,279	November.
1,951	1,665	1,332	1,359	1,310	3,934	3,431	3,228	2,586	2,584	December.
32,669	25,323	24,042	22,891	21,321	64,246	53,084	49,613	45,909	40,422	Total.
§ Aliens *en route* to America or other Places out of the United Kingdom.										
515	452	506	516	519	1,067	971	946	1,264	1,352	January.
893	806	725	1,065	826	1,711	1,699	1,263	1,988	1,613	February.
1,969	1,777	1,878	2,348	2,129	4,130	3,996	3,753	5,815	4,103	March.
2,476	2,209	2,055	2,812	2,037	6,375	4,446	4,139	6,580	5,157	April.
2,237	1,277	1,439	2,185	2,554	5,861	3,223	4,092	5,384	5,143	May.
1,534	1,081	853	1,437	1,728	5,243	2,479	2,352	4,051	3,864	June.
1,308	904	956	1,163	1,739	3,935	2,153	2,131	2,770	4,154	July.
1,806	1,195	1,487	1,459	2,829	4,669	2,863	3,322	3,279	5,057	August.
2,614	2,158	2,780	1,870	2,621	5,984	4,445	4,603	3,861	6,097	September.
1,892	1,124	1,876	1,366	1,967	4,816	2,820	2,828	2,538	3,646	October.
1,340	1,024	840	835	1,445	3,708	1,988	1,796	1,682	2,978	November.
658	505	347	435	726	2,448	1,094	996	824	1,473	December.
19,242	14,512	15,742	17,491	21,120	49,947	32,177	32,221	40,036	44,637	Total.

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V.—COMPARATIVE STATEMENT showing the Nationality of the ALIENS (exclusive of Seamen) who arrived in the *United Kingdom* from Continental Ports,* and who were not stated in the Alien Lists obtained under Act 6, Will. 4, c. 11, to be *en route* to *America* or other places out of the *United Kingdom*, in the Years 1895 to 1899; with similar particulars for *London, Hull, Grimsby, Newhaven*, and *Leith* and *Grangemouth*, separately, for the same Years.

NATIONALITY.	ALL PORTS.					LONDON.				
	1899.	1898.	1897.	1896.	1895.	1899.	1898.	1897.	1896.	1895.
Russians and Poles	20,266	15,248	14,775	12,773	10,204	14,927	12,263	12,232	9,762	7,281
Norwegians, Swedes, and Danes	5,695	4,775	4,617	4,437	3,700	1,289	1,091	1,106	1,120	860
Germans	5,926	5,886	5,496	5,557	5,665	3,016	3,231	3,015	3,032	2,925
Dutch	2,105	1,820	1,468	1,517	1,281	1,490	1,254	929	952	751
French	4,861	4,367	4,477	3,948	3,849	532	487	403	408	294
Austrians and Hungarians	2,548	1,941	1,306	1,246	865	1,824	1,612	1,029	950	496
Italians	5,553	4,224	4,061	3,448	2,738	118	175	139	137	142
Other Nationalities	3,930	2,524	2,651	2,522	2,226	1,393	1,048	843	747	664
TOTAL	†50,884	†40,785	†38,851	†35,448	†30,528	24,589	21,161	19,696	17,108	13,413

	HULL.					GRIMSBY.				
	1899.	1898.	1897.	1896.	1895.	1899.	1898.	1897.	1896.	1895.
Russians and Poles	1,115	786	955	1,219	1,070	3,671	1,278	685	794	549
Norwegians, Swedes, and Danes	581	586	448	402	361	245	150	158	93	129
Germans	399	658	570	534	548	629	399	479	453	526
Dutch	191	171	100	79	161	130	119	83	120	116
French	21	20	23	15	9	6	4	7	7	15
Austrians and Hungarians	97	86	56	46	32	379	43	29	40	31
Italians	30	53	27	15	36	180	112	141	116	105
Other Nationalities	84	47	57	69	72	55	39	22	42	7
TOTAL	2,518	2,407	2,236	2,379	2,289	5,295	2,144	1,604	1,665	1,478

	NEWHAVEN.					LEITH AND GRANGEMOUTH.				
	1899.	1898.	1897.	1896.	1895.	1899.	1898.	1897.	1896.	1895.
Russians and Poles	276	259	225	257	171	30	39	9	199	548
Norwegians, Swedes, and Danes	26	30	31	21	30	437	529	449	509	405
Germans	561	425	391	427	374	584	562	574	613	577
Dutch	18	18	12	24	20	120	109	151	147	131
French	3,448	3,138	3,515	3,085	3,222	62	46	76	38	24
Austrians and Hungarians	166	108	116	113	93	9	19	12	35	132
Italians	4,317	3,260	3,213	2,715	2,085	394	421	337	286	208
Other Nationalities	1,079	665	862	957	771	259	136	134	84	109
TOTAL	9,891	7,903	8,365	7,599	6,766	1,895	1,861	1,742	1,911	2,134

* Including all Mediterranean and Black Sea Ports.

† Of the number of aliens not stated on the Alien Lists to be *en route* to places abroad, it was ascertained from information supplied to Her Majesty's Consuls and to officers of Her Majesty's Customs that 2,889 in 1899, 2,336 in 1898, 2,676 in 1897, 2,961 in 1896, and 2,074 in 1895, were *en route* to places abroad.

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VI.—STATEMENT showing, for the Years 1891 to 1899, the destinations of the ALIENS who arrived in the *United Kingdom* from Continental Ports, and were declared on the ALIEN LISTS obtained under Act 6 Will. 4, c. 11, to be *en route* to Places Abroad, and of the ALIENS entered on the LISTS, who though not so declared, were ascertained from information supplied to Her Majesty's Consuls and to Officers of Her Majesty's Customs to be *en route* to Places Abroad.

NOTE.—*It will be understood that this Table relates only to aliens entered on the alien lists as having arrived from Continental ports, and that some of those so entered on the lists may have gone abroad who are not included in the Table.*

DESTINATION.	Number of Aliens.								
	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
America	51,076	33,110	33,071	39,765	45,010	36,752	79,106	93,679	98,587
South Africa	1,056	1,162	1,671	3,120	1,543	567	208	16	12
Other Places	704	241	155	112	158	359	624	106	106
TOTAL	52,836	34,513	34,897	42,997	46,711	37,678	79,938	93,801	98,705

VII.—COMPARATIVE STATEMENT of the Number of ALIENS on board Ships which arrived at *London* from Continental Ports, during the Year 1899, as shown in the ALIEN LISTS obtained under Act 6 Will. 4, c. 11, with corresponding figures for the Years 1891 to 1898.

NAME OF PORT.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
Amsterdam	786	849	858	861	679	623	462	437	582
Antwerp	209	154	150	156	139	219	87	73	72
Bordeaux	62	64	84	69	78	105	141	66	82
Bremen	6,336	6,559	4,094	4,572	3,575	2,537	3,825	1,064	662
Bremerhaven	—	–	–	–	–	–	247	147	328
Christiania and Christiansand	305	257	326	347	397	528	379	411	608
Dunkirk	113	248	213	171	155	190	217	218	237
Gothenburg	1,492	1,366	1,426	1,470	1,198	1,501	1,368	1,332	1,330
Hamburg	7,872	7,840	7,725	7,526	6,398	4,566	4,104	7,526	11,843
Copenhagen	117	144	138	121	92	109	79	70	} 125
Libau	2,966	1,882	3,952	1,420	123	13	76	19	
Malmo and Helsingborg	—	–	–	2	1	–	–	2	66
Rotterdam	4,397	2,440	1,458	1,559	1,808	2,414	1,817	742	919
Other Ports	2,185	1,620	1,348	1,015	856	752	1,072	938	622
TOTAL*	26,840	23,423	21,772	19,289	15,499	13,557	13,874	13,045	17,476

* A few of the aliens enumerated in the above Table were declared in the Alien Lists to be *en route* to places out of the United Kingdom.

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VIII.—COMPARATIVE STATEMENT of the Number of ALIENS on board Ships which arrived at *Hull* from Continental Ports, during the Year 1899, as shown in the ALIEN LISTS obtained under Act 6 Will. 4, c. 11, with corresponding figures for the Years 1891 to 1898.

NAME OF PORT.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
	ALIENS not stated to be *en route* to AMERICA or other Places out of the UNITED KINGDOM.								
Amsterdam	193	143	111	58	35	122	99	89	69
Antwerp	47	117	140	63	77	84	92	100	54
Bremen	937	548	409	606	533	415	710	380	178
Bremerhaven	—	–	–	–	–	–	12	49	107
Gothenburg	398	312	332	265	280	323	390	437	396
Hamburg	266	566	558	497	526	494	526	519	506
Hango and Helsingfors	745	705	426	526	285	287	231	228	192
Libau	150	129	396	582	376	654	129	19	12
Norwegian Ports:									
Christiania, Arendal, and Christiansand.	840	866	369	337	420	447	515	601	340
Other Norwegian Ports	349	352	377	281	314	331	399	369	267
Rotterdam	410	446	361	438	601	592	729	553	425
Other Ports	408	488	397	414	296	411	383	353	129
TOTAL	4,743	4,672	3,876	4,067	3,743	4,160	4,215	3,697	2,675
	ALIENS *en route* to AMERICA or other Places out of the UNITED KINGDOM.								
Amsterdam	49	31	9	5	26	32	407	96	45
Antwerp	4	5	2	4	46	108	904	843	378
Bremen	1,549	2,243	1,501	674	1,033	156	21	82	–
Copenhagen and Stettin	1,086	642	848	1,517	1,483	1,160	3,322	5,191	6,818
Libau	1,331	736	1,396	1,347	2,967	4,035	204	74	–
Gothenburg	7,305	4,982	5,146	6,571	7,923	4,190	18,931	24,650	29,248
Hamburg	23	137	298	153	305	402	406	7,817	11,681
Hango and Helsingfors	12,550	3,612	2,584	4,992	2,965	1,145	5,487	3,453	44
Norwegian Ports:									
Christiania, Arendal, and Christiansand.	3,478	2,555	2,323	3,372	3,196	2,382	7,025	8,136	6,876
Other Norwegian Ports	3,152	2,270	2,120	3,499	2,787	2,516	11,296	9,352	7,218
Rotterdam	25	46	108	39	370	460	2,066	357	115
Other Ports	147	72	67	34	275	99	366	184	500
TOTAL	30,699	17,331	16,402	22,207	23,376	16,685	50,435	60,235	62,923

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X.—COMPARATIVE STATEMENT of the Number of ALIENS on board Ships which arrived at *Grimsby* from Continental Ports during the Year 1899, as shown in the ALIEN LISTS obtained under Act 6 Will. 4, c. 11, with corresponding figures for the Years 1891 to 1898.

NAME OF PORT.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
	ALIENS not stated to be *en route* to AMERICA or other Places out of the UNITED KINGDOM.								
Antwerp	248	169	170	163	117	166	194	112	274
Esbjerg	355	254	157	135	133	112	119	159	93
Gothenburg	165	62	48	37	64	49	46	63	—
Hamburg	4,930	1,784	1,190	1,357	1,003	690	1,480	1,775	1,863
Malmo, Landscrona, and Helsingborg.	70	85	141	121	81	177	160	201	50
Rotterdam	232	186	180	201	243	284	409	56	26
Other Ports	35	13	59	20	28	10	45	23	12
TOTAL	6,035	2,553	1,945	2,034	1,669	1,488	2,453	2,389	2,318
	ALIENS *en route* to AMERICA or other Places out of the UNITED KINGDOM.								
Antwerp	319	127	275	254	833	845	2,191	1,315	630
Esbjerg	1,565	954	99	210	465	207	905	575	175
Gothenburg	6,056	5,212	8,011	8,306	4,815	3,198	6,583	4,254	—
Hamburg	167	448	355	600	706	222	989	10,286	12,938
Malmo, Landscrona, and Helsingborg.	69	217	345	837	1,136	784	1,451	2,526	2,436
Rotterdam	2,614	1,139	442	312	1,609	2,624	5,807	101	—
Other Ports	2	—	17	—	—	—	1	9	10
TOTAL	10,792	8,097	9,544	10,519	9,564	7,890	17,927	19,066	16,189

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X.—Comparative Statement of the Number of Aliens on board Ships which arrived at *Tyne Ports* from Continental Ports during the Year 1899, as shown in the Alien Lists obtained under Act 6 Will. 4, c. 11, with corresponding figures for the Years 1891 to 1898.

NAME OF PORT.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
	Aliens not stated to be *en route* to America or other Places out of the United Kingdom.								
Aalborg	20	20	61	75	58	82	84	133	336
Antwerp	102	120	104	97	66	135	126	137	88
Bilbao	206	24	82	13	73	27	21	48	55
Bremen and Bremerhaven	5	30	8	21	27	8	138	62	1
Copenhagen	769	680	424	543	342	362	301	311	299
Esbjerg	–	1	8	–	24	3	68	53	482
Fredericksbavn	31	62	77	73	37	72	68	18	39
Gothenburg	249	164	190	250	169	215	231	177	178
Hamburg	279	385	234	368	279	343	207	262	498
Libau	–	–	49	2	117	–	–	–	–
Malmo, Landscrona, and Helsingborg.	2	–	1	–	–	16	–	11	219
Norwegian Ports:									
Bergen and Stavanger	2,046	1,824	1,587	1,313	1,324	1,240	1,266	1,309	3,643
Christiania, Arendal, and Christiansand.	2,206	2,105	2,340	1,945	2,080	1,722	2,111	1,860	
Other Norwegian Ports	32	5	33	11	6	4	40	5	
Roscoff	143	98	82	64	72	106	81	61	61
Rotterdam	505	572	337	219	258	178	152	268	291
Other Ports	318	81	128	145	89	126	146	172	243
Total	6,913	6,171	5,745	5,139	5,021	4,639	5,040	4,887	6,433
	Aliens *en route* to America or other Places out of the United Kingdom.								
Aalborg	–	–	–	–	–	2	108	76	–
Esbjerg	–	–	–	–	–	–	203	1	7
Fredericksbavn	–	3	–	–	2	–	91	22	–
Gothenburg	7	2	–	–	–	–	21	–	–
Hango	982	–	–	–	–	–	–	–	–
Norwegian Ports:									
Bergen and Stavanger	1,613	1,250	788	558	283	37	39	–	–
Christiania, Arendal, and Christiansand.	342	191	145	115	69	23	–	–	–
Other Ports	54	–	1	–	1	6	63	13	5
Total	2,998	1,446	934	673	355	68	525	112	12

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XI.—COMPARATIVE STATEMENT of the Number of ALIENS on board Ships which arrived at *Leith* and *Grangemouth* from Continental Ports during the Year 1899, as shown in the ALIEN LISTS obtained under Act 6 Will, 4, c. 11, with corresponding figures for the Years 1891 to 1898.

NAME OF PORT.	1899.	1898.	1897.	1896.	1895.	1894.	1893.	1892.	1891.
	ALIENS not stated to be *en route* to AMERICA or other Places out of the UNITED KINGDOM.								
Amsterdam	45	24	41	55	39	50	31	47	54
Antwerp	480	535	405	391	257	324	271	169	152
Bremen	39	39	10	6	22	99	48	29	—
Bremerhaven	—	—	—	—	2	1	16	65	179
Copenhagen	176	307	155	153	153	145	102	126	*
Dunkirk	33	31	58	13	25	29	18	36	25
Faroe Islands and Iceland	310	227	172	148	47	36	54	21	19
Hamburg	484	768	554	669	628	548	507	778	686
Norwegian Ports:									
Christiania, Arendal, and Christiansand.	1,016	1,087	1,037	1,070	1,025	1,121	1,038	1,253	† 1,511
Other Norwegian Ports	28	18	54	11	19	17	25	23	24
Roscoff	34	26	44	22	20	50	50	51	47
Rotterdam	319	275	282	484	914	1,082	333	254	212
Other Ports	107	99	74	42	74	56	79	74	43
TOTAL	3,071	3,436	2,886	3,064	3,225	3,558	2,572	2,926	2,943
	ALIENS *en route* to AMERICA or other Places out of the UNITED KINGDOM.								
Antwerp	56	45	16	83	200	140	491	82	2
Bremen	—	1	52	348	2,341	3,672	2,872	338	—
Bremerhaven	—	—	—	—	22	22	245	2,089	1,340
Copenhagen	263	198	319	507	392	328	648	1,244	*
Faroe Islands and Iceland	84	83	71	26	11	55	—	—	172
Hamburg	—	10	34	131	933	395	270	4,952	8,329
Norwegian Ports:									
Christiania, Arendal, and Christiansand.	100	61	111	90	13	7	66	3	† 1,618
Other Norwegian Ports	—	—	—	—	1	2	—	—	2
Rotterdam	637	495	3	151	781	756	3,896	51	13
Other Ports	—	3	6	7	—	2	—	17	38
TOTAL	1,140	896	612	1,343	4,694	5,379	8,488	8,776	11,514

* Included with Christiania, Arendal and Christiansand.
† Including Copenhagen.

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XII.—Tables as to the Relief of Jewish Poor in *London* (compiled from Reports and Information supplied by Jewish Board of Guardians, &c.).

(*a*) Number of Applications for Relief to the Jewish Board of Guardians and the Russo-Jewish and Jewish Board of Guardians Conjoint Committee, and Number of Cases and of New Cases relieved by the Board, and by the Conjoint Committee, in each of the undermentioned Years.

Year.	Jewish Board of Guardians.			‡ Russo-Jewish and Jewish Board of Guardians Conjoint Committee.		
	Number of Applications for Relief. (Cases.)	Cases Relieved.		Number of Applications for Relief. (Cases.)	Cases Relieved.	
		Total Number.	Number of New Cases only.		Total Number.	Number of New Cases only.
1876	1,903	1,851	606*	—	—	—
1877	2,296	2,242	862*	—	—	—
1878	2,471	2,410	873*	—	—	—
1879	2,639	2,557	1,063*	—	—	—
1880	2,588	2,441	945*	—	—	—
1881	2,629	2,380	984*	—	—	—
1882	2,953	2,775	1,306*	§	†1,350	†1,350
1883	2,882	2,737	1,103*	147	147	87
1884	3,313	3,054	1,368	93	93	55
1885	3,586	3,408	1,586	106	106	70
1886	4,497	4,139	1,944	151	151	109
1887	3,415	3,313	1,205	121	121	91
1888	3,719	3,513	1,318	379	307	278
1889	3,131	2,980	923	526	329	286
1890	3,569	3,351	1,319	391	252	205
1891	4,722	4,474	2,092	618	438	366
1892	4,552	4,313	1,527	1,697	1,387	1,155
1893	5,178	4,881	1,826	1,409	1,202	1,043
1894	5,421	‖ 5,157	1,757	727	‖ 612	469
1895	5,080	‖ 4,794	1,565	518	‖ 406	264
1896	4,686	‖ 4,366	1,529	502	‖ 429	305
1897	4,694	‖ 4,286	1,495	587	‖ 469	332
1898	4,907	‖ 4,462	1,837	767	‖ 657	459
1899	4,702	‖ 4,319	1,784	635	‖ 558	368

* Up to 1883 the figures in this column include cases refused as well as cases relieved, but the numbers are small.
† Approximate number. ‡ Formerly called the "Mansion House and Jewish Board of Guardians Conjoint Committee." The Conjoint Committee was formed in 1882. § Cannot be given.
‖ The number of individuals comprised in the total number of cases relieved by the Board of Guardians and the Conjoint Committee was, in 1894, 22,353; in 1895, 20,873; in 1896, 18,078; in 1897, 17,612; in 1898, 18,315; and in 1899, 17,195.

(*b*) Number of Cases of Emigrants and Removals from *London* assisted by the Jewish Board of Guardians and the Russo-Jewish and Jewish Board of Guardians Conjoint Committee, in each of the undermentioned Years.

Year.	Jewish Board of Guardians.		Russo-Jewish and Jewish Board of Guardians Conjoint Committee.	
	Cases of Emigrants or Removals.	Individuals Comprised.	Cases of Emigrants or Removals.	Individuals Comprised.
1882	611	994	*1,150	1,831
1883	670	1,239	60	160
1884	799	1,330	42	96
1885	817	1,334	37	84
1886	919	1,557	98	172
1887	568	1,147	75	175
1888	701	1,254	229	378
1889	441	869	265	436
1890	621	1,004	161	415
1891	1,043	1,591	210	521
1892	520	1,033	748	1,343
1893	759	1,532	598	1,206
1894	720	1,345	365	789
1895	614	1,168	211	518
1896	743	1,286	179	323
1897	862	1,527	221	484
1898	973	1,701	377	758
1899	956	1,844	278	609

* Approximate number.

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XII.—TABLES as to Relief of the Jewish Poor in *London*—continued.

(c) DESTINATION of CASES of EMIGRANTS and REMOVALS from *London* assisted by the JEWISH BOARD OF GUARDIANS and the RUSSO-JEWISH and JEWISH BOARD OF GUARDIANS CONJOINT COMMITTEE, in each of the undermentioned Years.

YEAR.	DESTINATION OF CASES DEALT WITH BY THE JEWISH BOARD OF GUARDIANS.				DESTINATION OF CASES DEALT WITH BY THE RUSSO-JEWISH AND JEWISH BOARD OF GUARDIANS CONJOINT COMMITTEE.		
	The Continent.	America, Australia, Cape, &c.	Other Parts of Great Britain.	TOTAL.	The Continent.	America, Australia, Cape, &c.	TOTAL.
1882 - - -	451	117	43	611	* 420	* 730	* 1,150
1883 - - -	419	224	27	670	37	23	60
1884 - - -	542	200	57	799	17	25	42
1885 - - -	583	177	57	817	14	23	37
1886 - - -	554	333	32	919	73	25	98
1887 - - -	305	231	32	568	43	32	75
1888 - - -	340	336	25	701	113	116	229
1889 - - -	234	187	20	441	150	115	265
1890 - - -	418	175	28	621	50	111	161
1891 - - -	662	357	24	1,043	43	167	210
1892 - - -	330	156	34	520	329	419	748
1893 - - -	419	302	38	759	304	294	598
1894 - - -	542	155	23	†720	288	77	†365
1895 - - -	397	181	36	†614	143	68	†211
1896 - - -	523	190	30	†743	123	56	†179
1897 - - -	621	224	17	†862	154	67	†221
1898 - - -	688	259	26	†973	287	90	†377
1899 - - -	606	333	17	†956	170	108	†278

* Approximate number.

† The number of individuals comprised in the total number of cases of emigrants and removals dealt with by the Board of Guardians and the Conjoint Committee was, in 1894, 2,134; in 1895, 1,686; in 1896, 1,609; in 1897, 2,011; in 1898, 2,459; and in 1899, 2,453.

(d) STATEMENT showing the Number of INMATES of the POOR JEWS' TEMPORARY SHELTER, *Whitechapel*, and the Places from which they Arrived and to which they Departed, in each Month of the Year ended 31st October 1899, with Totals for the Years ended 31st October 1889 to 1899.

DATE.	Number of Inmates.	Arrived from			Went to							Remained in the United Kingdom.	Not specified.
		The Continent.	United States.	Other Places.	United States.	South America.	Canada.	Australia and New Zealand.	Africa.	Various Countries.	Native Towns.		
November 1898 - -	185	182	–	3	7	–	–	–	100	–	3	–	75
December „ - -	120	108	12	–	7	–	–	–	50	–	10	–	53
January 1899 - -	144	138	6	–	30	–	–	–	64	–	6	–	44
February „ - -	117	107	8	2	8	–	–	–	51	–	9	–	49
March „ -	118	103	9	6	5	–	–	–	35	–	13	–	65
April „ - -	174	166	6	2	22	–	–	–	46	–	6	–	100
May „ - -	268	260	8	–	7	–	–	–	182	–	7	–	72
June „ - -	462	457	5	–	7	–	–	–	316	–	5	–	134
July „ - -	367	360	7	–	15	–	–	–	133	–	6	–	213
August „ - -	374	365	9	–	12	–	–	–	159	–	9	–	194
September „ - -	90	85	5	–	–	–	–	–	18	–	5	–	67
October „ - -	275	259	16	–	13	–	–	–	22	–	11	–	229
Year ended 31st October 1899 -	2,694	2,590	91	13	133	–	–	–	1,176	–	90	–	1,295
Years ended:													
31st October 1898 -	*2,060*	*1,990*	*64*	*6*	*225*	–		–	*808*	*4*	*57*	*965*	–
„ 1897 -	*2,811*	*2,637*	*174*	–	*49*	–	–	–	*1,337*	*8*	*137*	*1,280*	–
„ 1896 -	*3,450*	*3,296*	*154*	–	*263*	*44*	*47*	*69*	*2,134*	*64*	*396*	*433*	–
„ 1895 -	*2,256*	*2,193*	*63*	–	*509*	*15*	*21*	*24*	*880*	*58*	*351*	*365*	*35*
„ 1894 -	*1,874*	*1,576*	*298*	–	*231*	*107*	*103*	*106*	*509*	*33*	*412*	*328*	*4*
„ 1893 -	*1,951*	*1,855*	*96*	–	*302*	*245*	*412*	*133*	*453*	*83*	*88*	*236*	–
„ 1892 -	*1,748*	* *1,401*	*119*	*28*	*335*	*166*	*234*	*308*	–	*137*	*71*	*177*	*120*
„ 1891 -	*2,021*	* *1,861*	*119*	*41*	*504*			*286*			*311*	*920*	
„ 1890 -	*1,399*	* *1,065*	*213*	*121*	*94*			*17*			*269*	*584*	*435*
„ 1889 -	*783*	* *509*	*181*	*93*	*90*			*23*			*258*	*333*	*79*

* Number arrived from Hamburg only.

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XIII.—STATEMENT showing the Number of CASES Relieved by the BOARD OF GUARDIANS for the RELIEF of the JEWISH POOR of *Manchester*, in each of the undermentioned Years.

(Furnished by the Manchester Jewish Board of Guardians).

Year ended 31st March.	Residents.			Casuals.		
	Number of Cases Relieved. (1.)	Number of Times Relieved. (2.)	Number of Individuals included in Cases in Column (1). (3.)	Number of Cases Relieved. (4.)	Number of Times Relieved. (5.)	Number of Individuals included in Cases in Column (4). (6.)
1882	212	3,797	984	176	246	241
1883	212	4,684	920	208	270	293
1884	234	4,466	1,075	142	174	159
1885	221	3,962	1,047	201	349	244
1886	218	4,275	1,009	247	328	315
1887	239	4,474	1,154	235	265	309
1888	258	4,529	1,206	185	247	224
1889	204	4,139	911	160	226	201
1890	205	4,313	931	162	198	231
1891	224	4,009	971	242	328	300
1892	256	4,249	1,011	260	337	382
1893	258	4,223	1,024	222	284	289
1894	288	4,583	1,239	236	276	272
1895	271	4,538	1,120	228	301	284
1896	240	4,262	928	237	282	314
1897	238	4,288	1,036	214	251	252
1898	248	4,223	1,040	204	249	258
1899	237	3,784	1,051	213	272	299

XIV.—STATEMENT showing the Number of CASES Relieved by the BOARD OF GUARDIANS for the RELIEF of the JEWISH POOR of *Liverpool* in the undermentioned Years.

(Furnished by the Liverpool Jewish Board of Guardians.)

YEAR.	CASES RELIEVED.		Expenditure on Relief.
	Residents.	Casuals.	
			£.
1882	132	110	387
1883	105	111	401
1884	98	155	690
1885	74	152	696
1886	66	214	669
1887	68	218	704
1888	69	153	497
1889	76	193	591
1890	76	212	479
1891	54	454	589
1892	77	416	626
1893	107	427	810
1894	122	433	701
1895	145	383	695
1896	117	310	778
1897	130	230	811
1898	127	252	780
1899	131	161	849

XV.—STATEMENT showing the Number of ALIEN JEWS Relieved by the *Hull* JEWISH BOARD OF GUARDIANS in each of the undermentioned Years.

(Furnished by the Hull Jewish Board of Guardians.)

Year.	Total Number of Alien Jews Relieved.	Number who had been resident in Hull less than Three Years.
1896	1,332	593
1897	1,300	493
1898	1,306	769
1899	1,157	681

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XVI.—STATEMENT showing the Number of CASES Relieved by the BOARD OF GUARDIANS for the RELIEF of the JEWISH POOR of *Leeds*, in each of the undermentioned Years.

(Furnished by the Leeds Jewish Board of Guardians.)

YEAR.	RESIDENTS.			CASUALS.		
	Number of Cases Relieved. (1.)	Number of Times Relieved. (2.)	Number of Individuals included in Cases in Column (1). (3.)	Number of Cases Relieved. (4.)	Number of Times Relieved. (5.)	Number of Individuals included in Cases in Column (4). (6.)
1895 - -	128	2,635	541	160	300	225
1896 - -	137	2,847	573	279	597	348
1897 - -	197	3,942	716	336	714	417
1898 - -	191	3,899	699	290	543	311
1899 - -	199	3,951	723	323	613	343

XVII.—STATEMENT showing the Number of CASES Relieved by the BRADFORD (YORKS) SOCIETY for the RELIEF of FOREIGNERS IN DISTRESS, in each of the undermentioned Years.

(Furnished by the Society.)

YEAR.	Number of Applications (Cases). (1.)	Number of Cases Relieved.		Number of Individuals in Total Number of Cases in Column (2). (4.)	Number of Individuals in Number of New Cases in Column (3). (5.)
		Total Number. (2.)	Number of New Cases. (3.)		
1890 - -	139	119	97	129	100
1891 - -	162	156	118	237	139
1892 - -	251	235	179	325	208
1893 - -	278	268	215	415	261
1894 - -	273	261	181	408	247
1895 - -	303	296	195	529	226
1896 - -	214	202	161	227	179
1897 - -	222	199	178	231	195
1898 - -	218	208	172	221	188
1899 - -	119	116	92	133	109

XVIII.—STATEMENT showing the Number of British and Foreign JEWS Relieved, and the Amount of Relief granted by the CARDIFF HEBREW CONGREGATION, in each of the undermentioned Years.

(Furnished by the Honorary Secretary to the Cardiff Hebrew Congregation.)

YEAR.	Number of Jews to whom Relief was granted.	Amount of Relief granted.
		£.
1891 - - - -	126	16
1892 - - - -	195	24
1893 - - - -	298	37
1894 - - - -	159	40
1895 - - - -	169	42
1896 - - - -	195	49
1897 - - - -	No information.	
1898 - - - -	ditto.	
1899 - - - -	ditto.	

XIX.—STATEMENT showing the Number of INDIVIDUALS Relieved by the EDINBURGH and LEITH SOCIETY for the RELIEF of DESERVING FOREIGNERS in Distress, the Number of Times Relief was granted, and the Amount of Relief granted, in each of the undermentioned Years.

(Furnished by the Society.)

Year ended last day of February.	Number of Individuals Relieved.			Number of Times Relief was granted to			Amount of Relief granted to		
	Alien Jews.	Other Aliens.	TOTAL.	Alien Jews.	Other Aliens.	TOTAL.	Alien Jews.	Other Aliens.	TOTAL.
							£.	£.	£.
1894 -	153	234	387	153	262	415	124	146	270
1895 -	214	245	459	214	297	511	139	110	249
1896 -	218	274	492	218	404	622	141	129	270
1897 -	171	290	461	171	521	692	49	138	187
1898 -	152	233	385	152	432	584	36	135	171
1899 -	133	241	374	133	402	535	33	131	164
1900 -	106	241	347	106	440	546	32	113	145

Note.—The amount of relief granted includes 75*l.* received by the Society from the Jewish Board of Guardians in each of the years ended the last day of February 1894, 1895 and 1896.

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XX.—STATEMENT showing the Number of CASES Relieved by the *Glasgow* JEWISH BOARD OF GUARDIANS and PHILANTHROPIC ASSOCIATION, in each of the undermentioned Years.

(Furnished by the Association.)

YEAR.	NUMBER OF CASES RELIEVED.	
	Total Number.	Number of New Cases.
1894 - - - - -	378	378
1895 - - - - -	293	216
1896 - - - - -	223	165
1897 - - - - -	310	120
1898 - - - - -	376	100
1899 - - - - -	No information.	

XXI. STATEMENT showing the Number of JEWS Relieved, and the Amount of Relief granted by the *Brighton* JEWISH BOARD OF GUARDIANS, in each of the undermentioned Years.

(Furnished by the Brighton Jewish Board of Guardians.)

YEAR.	Total Number Relieved.		Number Relieved who had been Resident in Brighton less than Three Years.		Amount of Relief Granted.
	Natives of the United Kingdom.	Foreigners.	Natives of the United Kingdom.	Foreigners.	
					£.
1895 - - -	—	113	14	83	113
1896 - - -	—	94	13	75	78
1897 - - -	—	113	8	99	81
1898 - - -	10	120	10	114	103
1899 - - -	40	182	32	182	110

XXII. STATEMENT showing the Number of APPLICATIONS for RELIEF received by the *Newcastle-upon-Tyne* JEWISH BOARD OF GUARDIANS (FRIEND-IN-NEED SOCIETY), and the Amount expended by the Board in Relief, in each of the undermentioned Years.

(Furnished by the Newcastle-upon-Tyne Jewish Board of Guardians.)

YEAR.	Number of Applications for Relief.	Amount Expended in Relief.
		£.
1896 - - - - -	562	143
1897 - - - - -	503	159
1898 - - - - -	437	154
1899 - - - - -	401	157

XXIII. EUROPEAN CONSULAR DISTRICTS from which Reports have been received as to EMIGRATION of Destitute ALIENS to the *United Kingdom* in 1899. (*See* Report *supra*, page 13.)

Name of District.	Name of District.	Name of District.	Name of District.
Ajaccio.	Cherbourg.	Hamburg.	Reykjavik.
Amsterdam.	Christiania.	Havre.	Riga.
Antwerp.	Constantinople.	La Rochelle.	Rome
Barcelona.	Copenhagen.	Lisbon.	Rotterdam.
Bilbao.	Corfu.	Marseilles.	St. Petersburg.
Bordeaux.	Corunna.	Naples.	Salonica.
Brest.	Danzig.	Nice.	Sofia.
Brindisi.	Dunkirk.	Odessa.	Stettin.
Cadiz.		Oporto.	Stockholm.
Cagliari.	Galatz.	Palermo.	Syra.
Calais.	Genoa.	Patras.	Taganrog.
Canea.	Gothenburg.	Piraeus.	Trieste.

APPENDIX

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EMIGRATION FROM FOREIGN COUNTRIES.

STATEMENT showing the Number of PERSONS (Natives of the respective Countries except where otherwise stated) who Emigrated from the undermentioned Countries to places out of EUROPE in each of the Years 1889 to 1898, with the DESTINATIONS of the EMIGRANTS, so far as they can be ascertained.

(From information supplied by the Authorities of the respective Countries.)

	United States.	British North America.	Brazil.	Argentine Republic.	Africa.	Australasia.	Other Places.	TOTAL.
NORWAY (Norwegians to places out of Europe):								
1889	12,597	19	–	–	–	17	9	12,642
1890	10,898	51	–	–	–	21	21	10,991
1891	13,249	79	–	–	–	5	8	13,341
1892	16,814	223	–	–	–	6	6	17,049
1893	18,690	75	–	–	–	6	7	18,778
1894	5,591	22	–	–	–	2	27	5,642
1895	6,153	6	–	–	–	3	45	6,207
1896	6,584	22	–	–	–	10	63	6,679
1897	4,580	3	–	–	–	2	84	4,669
1898	4,805	13	–	–	–	6	35	4,859
SWEDEN (Swedes to places out of Europe):								
1889	28,529	*	*	–	–	113	425	29,067
1890	29,487	*	*	–	–	111	530	30,128
1891	36,134	*	1,770	–	–	106	308	38,318
1892	40,990	*	4	–	–	85	196	41,275
1893	37,321	*	26	–	–	51	106	37,504
1894	9,529	*	13	–	–	48	88	9,678
1895	14,982	*	†	†	†	†	†	†
1896	14,874	*	†	†	†	†	†	†
1897	10,109	†	†	†	†	†	†	†
1898	No Information.							
DENMARK (Danes to places out of Europe):								
1889	8,271	157	*	*	–	107	432	8,967
1890	9,524	365	*	*	–	87	322	10,298
1891	9,781	326	*	*	–	73	202	10,382
1892	9,763	500	*	*	–	62	97	10,422
1893	8,551	434	*	*	–	35	130	9,150
1894	3,719	224	*	*	–	31	131	4,105
1895	3,287	111	*	*	–	34	175	3,607
1896	2,479	81	*	*	–	47	269	2,876
1897	1,963	47	*	*	–	48	202	2,260
1898	2,073	101	*	*	–	49	117	2,340
GERMAN EMPIRE (Germans to places out of Europe):								
1889	90,197	88	2,412	1,519	422	496	898	96,032
1890	89,765	307	4,148	1,033	471	474	905	97,103
1891	113,046	976	3,779	665	599	438	586	120,089
1892	111,806	1,577	796	699	476	376	609	116,339
1893	78,249	6,136	1,173	633	586	261	639	87,677
1894	35,902	1,490	1,288	673	760	225	626	40,964
1895	32,503	1,100	1,405	*	886	221	1,383	37,498
1896	29,007	634	1,001	*	1,346	174	1,662	33,824
1897	20,346	539	936	*	1,115	324	1,371	24,631
1898	17,272	208	785	*	1,092	163	1,317	¶ 20,837
HOLLAND (Dutch to places out of Europe):								
1889	5,050		*	*	41	*	§ 4,020	9,111
1890	3,282		*	*	77	*	§ 167	3,526
1891	3,923		*	*	152	*	–	4,075
1892	6,211		*	*	79	*	–	6,290
1893	4,820		*	*	–	*	–	4,820
1894	1,146		*	*	–	*	–	1,146
1895	1,277		*	*	37	*	–	1,314
1896	1,241		*	*	95	*	§ 51	1,387
1897	†		*	*	†	*	†	792
1898	781		*	*	70	*	–	851
BELGIUM (Belgians to places out of Europe):								
1889	*	*	*	*	*	*	*	‖ 8,406
1890	*	*	*	*	*	*	*	‖ 2,976
1891	*	*	*	*	*	*	*	‖ 3,456
1892	4,297	745	–	–	2	13	117	5,174
1893	2,431	1,326	–	–	1	10	113	3,881
1894	1,139		*	*	12	1	§ 115	1,267
1895	1,160		*	*	5	5	§ 148	1,318
1896	1,149		*	*	42	6	§ 232	1,429
1897	740		*	*	28	6	§ 149	923
1898	No Information.							

* Not separately stated.
† Cannot be given.
§ Emigrants to South America; it is not stated to what part.
‖ The destinations of these emigrants are not fully given, but it appears that in 1890 and 1891 about two-thirds of them went to North America, and that in 1889 about 2,000 proceeded to North America, and about 6,000 to South America, and that nearly all the latter went to the Argentine Republic.
¶ Exclusive of Emigration *vid* French ports.

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EMIGRATION FROM FOREIGN COUNTRIES.

STATEMENT showing the Number of PERSONS (Natives of the respective Countries except where otherwise stated) who Emigrated from the undermentioned Countries to places out of EUROPE in each of the Years 1889 to 1898, with the DESTINATIONS of the EMIGRANTS, so far as they can be ascertained—*continued.*

	United States.	British North America.	Brazil.	Argentine Republic.	Africa.	Australasia.	Other Places.	TOTAL.
FRANCE (French to places out of Europe):								
1889	3,658		582	* 24,410	41	—	2,663	31,354
1890	3,085		262	* 14,001	65	—	3,147	20,560
1891	2,950		183	* 2,073	84	—	927	6,217
1892	2,798		192	* 2,106	93	—	339	5,528
1893	†		†	†	†	†	†	5,586
1894	No information.							
1895	ditto.							
1896	ditto.							
1897	ditto.							
1898	ditto.							
PORTUGAL AND PORTUGUESE POSSESSIONS (Portuguese to places out of Europe):								
1889	†	†	†	†	1,340	†	‡ 18,307	19,647
1890	†	†	†	†	1,879	†	‡ 27,066	28,945
1891	1,929		29,630	†	1,574	†	101	33,234
1892	111		17,321	†	1,189	†	2,151	20,772
1893	2,686		26,130	†	1,252	†	25	30,093
1894	†	†	†	†	1,402	†	‡ 27,607	29,009
1895	†	†	†	†	1,239	†	‡ 43,180	44,419
1896	†	†	†	†	1,145	†	‡ 26,480	27,625
1897	†	†	†	†	1,541	†	19,828	21,369
1898	†	†	†	†	1,854	†	21,426	23,280
SPAIN (Spaniards and Persons of other Nationalities to Places out of Europe):								
1889	21	–	7,527	58,135	22,142	5	‖ 35,262	123,092
1890	19	2	5,186	9,561	16,734	8	‖ 31,198	62,708
1891	20	61	10,023	3,821	21,003	3	‖ 30,583	65,514
1892	40	†	3,606	4,593	19,073	11	‖ 36,455	63,778
1893	119	†	11,172	6,799	17,931	–	‖ 37,330	73,351
1894	43	†	4,526	7,069	20,139	2	‖ 36,249	68,028
1895	13	†	10,355	7,732	15,727	4	‡‡	‡‡
1896	11		†	†	19,205	–	‡‡	‡‡
1897	16		†	†	18,196	6	‡‡	‡‡
1898	No information.							
ITALY (Italians to places out of Europe):								
1889	25,881		16,953	§ 75,058	†	†	7,889	125,781
1890	48,019		16,233	§ 41,352	†	†	9,991	115,595
1891	44,522		108,414	§ 27,542	†	†	9,268	189,746
1892	43,164		36,448	§ 28,542	†	†	8,488	116,642
1893	49,765	382	45,324	§ 36,212	†	†	10,586	142,269
1894	31,668	805	41,628	32,557	2,663	68	5,177	114,566
1895	37,851	783	98,090	41,029	3,432	154	6,569	187,908
1896	53,883		76,665	†	†	†	67,006	197,554
1897	47,139		80,984	†	†	†	46,422	174,545
1898	§§		§§	§§	§§	§§	§§	139,188
SWITZERLAND (Swiss and other Nationalities¶ to places out of Europe):								
1889	6,966		†	†† 1,419	15	23	7	8,430
1890	6,917		†	†† 752	15	23	5	7,712
1891	6,936		†	†† 500	17	47	16	7,516
1892	7,342		†	†† 438	10	20	25	7,835
1893	5,689		†	†† 447	15	21	5	6,177
1894	3,306		†	†† 496	20	17	10	3,849
1895	3,708		†	†† 512	29	13	6	4,268
1896	2,789		†	†† 499	28	9	5	3,330
1897	2,152		†	†† 307	33	7	9	2,508
1898	1,993		†	†† 243	33	16	3	2,288
AUSTRIA-HUNGARY (Austrians and Hungarians to places out of Europe):								
1889	42,170		321	4,225	†	†	8,951	55,667
1890	63,119		1,304	1,918	†	†	7,661	74,002
1891	70,711		4,246	263	†	†	6,187	81,407
1892	69,926		574	552	†	†	3,895	74,947
1893	†		2,737	685	†	†	†	65,544
1894	22,965		754	440	†	†	1,407	25,566
1895	50,951		10,511	549	†	†	4,090	66,101
1896	45,327		11,389	220	†	†	13,147	70,083
1897	32,033		‖‖ 3,166	1,485	†	†	540	37,224
1898	No information.							

* Including emigrants to Uruguay. † Not separately stated.
‡ It is stated that the greater number of these went to Brazil. § Including emigrants to Uruguay and Paraguay.
‖ Of these, 21,421 in 1889; 21,194 in 1890; 22,886 in 1891; 30,306 in 1892; 28,234 in 1893; and 29,193 in 1894, proceeded to Cuba.
¶ The number of emigrants of other nationalities than Swiss was, in 1889, 985; in 1890, 1,019; in 1891, 995; in 1892, 1,206; in 1893, 948; in 1894, 986; in 1895, 1,161; in 1896, 889; in 1897, 730; and in 1898, 594.
†† To South America. ‡‡ Cannot be given. §§ Particulars not yet available.
‖‖ Including 392 emigrants to South America,—the part to which the emigrants were proceeding not being stated.

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STATISTICAL TABLES

RELATING TO

EMIGRATION AND IMMIGRATION

FROM AND INTO THE

UNITED KINGDOM

IN THE YEAR 1899,

AND

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(*Mr. Ritchie.*)

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OBSERVATIONS

ON

THE EMIGRATION STATISTICS OF IRELAND

FOR THE YEAR 1899.

TO HIS EXCELLENCY GEORGE HENRY, EARL CADOGAN, K.G.,

&c., &c., &c.,

LORD LIEUTENANT-GENERAL AND GENERAL GOVERNOR OF IRELAND.

MAY IT PLEASE YOUR EXCELLENCY,

I have the honour to submit detailed Tables regarding Emigration from Ireland during the year 1899, showing by Sexes, the ages, occupations, and civil or conjugal condition of the Emigrants, with the ports at which they embarked, and their intended destinations. **Emigration from Irish Ports.**

The number of Emigrants who left Irish ports in 1899 was 43,760, or 9·7 per 1,000 of the estimated population of Ireland in the middle of the year, being an increase of 9,895 as compared with the number in 1898. The number of males who emigrated last year was 20,568, or 5,303 more than in the previous year, and of females, 23,192, an increase of 4,592.

Of the 43,760 Emigrants in 1899, 41,232 were natives of Ireland, and 2,528 were persons belonging to other countries. Compared with the corresponding numbers for 1898, the number of Emigrants, natives of Ireland, shows an increase of 8,991 and, the number of persons belonging to other countries, an increase of 904.

The following Table (I.) gives the number of Emigrants from each province in 1898 and 1899, by sexes, with the increase in the latter year. Of the 41,232 natives of Ireland who left the country last year, 3,542, or 3·0 per 1,000 of the population of the Province in 1891, were from Leinster; 15,758, or 13·4 per 1,000, from Munster; 8,701, or 5·4 per 1,000, from Ulster; and 13,231, or 18·4 per 1,000, from Connaught—the total number being equal to 8·8 per 1,000 of the population of Ireland in 1891.

Comparing 1899 with 1898, Leinster exhibits an increase of 202, Munster an increase of 2,745, Ulster an increase of 3,124, and Connaught an increase of 2,920 emigrants.

TABLE I.—Showing the number of Emigrants from each Province during 1898 and 1899, and the increase in the latter year.

Emigrants from	Males.			Females.			Total.		
	1898.	1899.	Increase in 1899.	1898.	1899.	Increase in 1899.	1898.	1899.	Increase in 1899.
Provinces. Leinster,	1,760	1,821	61	1,580	1,721	141	3,340	3,542	202
Munster,	5,922	7,372	1,450	7,091	8,386	1,295	13,013	15,758	2,745
Ulster,	2,597	4,366	1,769	2,980	4,335	1,355	5,577	8,701	3,124
Connaught,	3,751	5,062	1,311	6,560	8,169	1,609	10,311	13,231	2,920
Total—Natives of Ireland,	14,030	18,621	4,591	18,211	22,611	4,400	32,241	41,232	8,991
Persons belonging to other Countries,	1,235	1,947	712	389	581	192	1,624	2,528	904
General Total,	15,265	20,568	5,303	18,600	23,192	4,592	3,865	43,760	9,895

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Number of Emigrants, 1851–99.

The total number of Emigrants—*natives of Ireland*—who left Irish ports from the 1st of May, 1851 (the date at which the collection of these returns commenced), to the 31st of December, 1899, is 3,796,131,—1,981,443 males and 1,814,688 females. The number for each year is given in the following Table (II.), from which it appears that the highest number in any one year was 190,322 in 1852, and the lowest, 32,241, in 1898. In the decade, from 1866 to 1875, the average annual number of Emigrants was 74,667; in the decade, 1856 to 1865, the average number per annum amounted to 88,272, and in the four preceding years, from 1852 to 1855, the number averaged 148,985 annually. In 1876 the number fell to 37,587, the lowest number for any of the 26 years, 1851–76. After 1876 it increased steadily, but slowly, for three years to 38,503 in 1877, 41,124 in 1878, and 47,065 in 1879. In 1880 the number rose to 95,517, but it fell to 78,417 in 1881. In 1882, however, an increase of 10,719 took place, and there was a further increase in 1883, in which year the emigrants amounted to 108,724; then a decrease of 32,861 took place in 1884 compared with 1883, and a decrease of 13,829 in 1885 compared with 1884, followed by an increase of 1,101 in 1886, and a further increase of 19,788 in 1887, in which year the number was 82,923. After 1887 there was a gradual annual decline to 35,895, in 1894; in 1895 the number rose to 48,703; it then fell to 38,995 in 1896, to 32,535 in 1897, and to 32,241 in 1898, and (as before stated) it rose to 41,232 in 1899.

TABLE II.—Showing the Number of Emigrants—NATIVES of IRELAND—in each year from the 1st of May, 1851,* to the 31st of December, 1899.

Years.	No. of Emigrants.	Years.	No. of Emigrants.	Years.	No. of Emigrants.	Years.	No. of Emigrants.
1851, (from the 1st of May.*)	152,060	1864, . .	114,169	1877, . .	38,503	1890, . .	61,313
1852, . .	190,322	1865, . .	101,497	1878, . .	41,124	1891, . .	59,623
1853, . .	173,148	1866, . .	99,467	1879, . .	47,065	1892, . .	50,867
1854, . .	140,555	1867, . .	80,624	1880, . .	95,517	1893, . .	48,147
1855, . .	91,914	1868, . .	61,018	1881, . .	78,417	1894, . .	35,895
1856, . .	90,781	1869, . .	66,568	1882, . .	89,136	1895, . .	48,703
1857, . .	95,081	1870, . .	74,855	1883, . .	108,724	1896, . .	38,995
1858, . .	64,337	1871, . .	71,240	1884, . .	75,863	1897, . .	32,535
1859, . .	80,599	1872, . .	78,102	1885, . .	62,034	1898, . .	32,241
1860, . .	84,621	1873, . .	90,149	1886, . .	63,135	1899, . .	41,232
1861, . . .	64,292	1874, . .	73,184	1887, . .	82,923		
1862, . .	70,117	1875, . .	51,462	1888, . .	78,684	Total,	3,796,131
1863, . .	117,220	1876, . .	37,587	1889, . .	70,477		

* The date at which the collection of these Returns commenced.

Number of Emigrants from each County and Province.

The succeeding Table (III.) is in continuation of one published annually for some years past, and gives the number and sex of the Emigrants from each county and province from the 1st of May, 1851, to the 31st of December, 1899. For purposes of comparison of the several counties and provinces the per-centage of emigrants to the population† is also shown.

From this Table it appears that during the above period 3,838,156 persons emigrated from Irish ports. Of these, 3,796,131 were natives of Ireland, and 42,025 were persons belonging to other countries. The former number (3,796,131,) is equivalent to 68·6 per cent. of the average population;† Munster having contributed 1,328,956 persons, being equal to 91·3 per cent. of the average population of the province; Connaught, 602,379, or 69·7 per cent.; Ulster, 1,074,776, or 58·9 per cent.; and Leinster, 679,352, equivalent to 48·9 per cent. of its average population.† In 110,668 cases the county from which the persons came was not specified in the returns; since 1876, however, this information has been given in every case, with the exception of 53 in 1880.

† Calculated on an average of the Census Numbers for 1851, 1861, 1871, 1881, and 1891.

[TABLE.

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TABLE III.—Showing by Sexes, the Number of Emigrants from each Province and County, from the 1st of May, 1851, to the 31st of December, 1899, with the Ratio to the average Population.*

PROVINCES AND COUNTIES.	Estimated Average Population.*	Emigrants from 1st May, 1851, to 31st December, 1899.			
		Males.	Females.	Total.	Emigrants to every 100 of the Average Population.*
PROVINCE OF LEINSTER.					
Carlow County,	52,900	16,425	15,584	32,009	60·5
Dublin „	412,912	61,751	49,081	110,832	26·8
Kildare „	83,413	19,729	16,019	35,748	42·9
Kilkenny „	116,040	37,734	35,289	73,023	62·9
King's „	83,431	29,697	28,068	57,765	69·2
Longford „	66,482	28,286	27,409	55,695	83·8
Louth, and Drogheda, County of Town,	86,295	20,704	21,772	42,476	49·2
Meath County,	102,238	33,817	30,804	64,621	63·2
Queen's „	84,030	28,240	28,127	56,367	67·1
Westmeath „	83,639	26,638	23,488	50,126	59·9
Wexford „	138,516	37,720	33,954	71,674	51·7
Wicklow „	79,335	16,184	12,832	29,016	36·6
TOTAL,	1,389,231	356,925	322,427	679,352	48·9
PROVINCE OF MUNSTER.					
Clare County,	158,569	72,984	76,100	149,084	94·0
Cork „	529,889	255,162	236,770	491,932	92·8
Kerry „	203,436	103,797	103,989	207,786	102·1
Limerick „	202,267	89,738	87,154	176,892	87·5
Tipperary „	234,454	105,418	98,898	204,316	87·1
Waterford „	126,617	53,379	45,567	98,946	78·1
TOTAL,	1,455,232	680,478	648,478	1,328,956	91·3
PROVINCE OF ULSTER.					
Antrim County,	395,195	144,588	104,766	249,354	63·1
Armagh „	174,425	52,339	41,281	93,620	53·7
Cavan „	142,059	56,084	54,384	110,468	77·8
Donegal „	220,527	64,848	56,581	121,429	55·1
Down „	294,078	82,476	54,862	137,338	46·7
Fermanagh „	94,810	27,642	26,253	53,895	56·8
Londonderry „	173,477	57,488	44,423	101,911	58·7
Monaghan „	114,454	38,184	35,181	73,365	64·1
Tyrone „	215,821	71,031	62,365	133,396	61·8
TOTAL,	1,824,846	594,680	480,096	1,074,776	58·9
PROVINCE OF CONNAUGHT.					
Galway County,	260,069	94,295	102,499	196,794	75·7
Leitrim „	96,239	36,335	36,943	73,278	76·1
Mayo „	247,764	72,903	86,375	159,278	64·3
Roscommon „	143,880	49,286	50,629	99,915	69·4
Sligo „	115,700	34,775	38,339	73,114	63·2
TOTAL,	863,652	287,594	314,785	602,379	69·7
County unspecified,	—	61,766	48,902	110,668	—
TOTAL—NATIVES OF IRELAND,	—	1,981,443	1,814,688	3,796,131	68·6
Persons belonging to other Countries who embarked at Irish Ports from 1858 *to* 1899, *inclusive*,	—	29,147	12,878	42,025	—
GENERAL TOTAL,	5,532,961	2,010,590	1,827,566	3,838,156	—

* Based on the Census Returns of 1851, 1861, 1871, 1881, and 1891.

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Ages of Emigrants.

The ages of the Emigrants are given by Provinces in the following Table (IV.), from which it appears that 82·9 per cent. of the persons who left Ireland in 1899 were between the ages of fifteen and thirty-five years, the percentage over that age being 9·4, and of children under fifteen years 7·7: in one case the age was unspecified. The corresponding percentages in 1898 for the three age-periods given above were 82·3, 10·3, and 7·4 respectively. The percentage of the Emigrants in 1897 who were from fifteen to thirty-five years of age was 83·0; in 1896 the percentage was 83·7; in 1895 it was 84·7; in 1894, 83·1; in 1893, 85·0; in 1892, 83·2; in 1891, 82·5; in 1890, 81·0; in 1889, 79·7; in 1888, 80·1; in 1887, 79·8; in 1886, 78·1; in 1885, 75·2; in 1884, 70·5; in 1883, 67·9; in 1882, 74·8; in 1881, 76·0; and in 1880, 75·7 per cent.

TABLE IV.—Showing the NUMBER and AGES of EMIGRANTS from each Province and from all Ireland during 1899, also the proportion per cent. at each age-period.

AGES.	LEINSTER.		MUNSTER.		ULSTER.		CONNAUGHT.		Persons belonging to other Countries	TOTAL.	
	Number of Persons.	Proportion per cent. at each age-period.	Number of Persons.	Proportion per cent. at each age-period.	Number of Persons.	Proportion per cent. at each age-period.	Number of Persons.	Proportion per cent. at each age-period.	No. of Persons.	Number of Persons.	Proportion per cent. at each age-period.
Under 1 year, . .	18	0·5	74	0·5	134	1·5	52	0·4	27	305	0·7
1 and under 5,	73	2·1	203	1·3	548	6·2	195	1·5	170	1,184	2·7
5 „ 15,	166	4·7	439	2·8	654	7·5	417	3·1	222	1,898	4·3
15 „ 25,	1,570	44·3	9,718	61·7	3,894	44·8	8,438	63·7	688	24,308	55·6
25 „ 35,	1,285	36·3	4,223	26·8	2,449	28·2	3,131	23·7	875	11,963	27·3
35 „ 45,	270	7·6	640	4·0	604	6·9	591	4·5	329	2,434	5·6
45 „ 55,	98	2·7	282	1·8	292	3·4	263	2·0	151	1,086	2·5
55 „ 60,	31	0·9	95	0·6	64	0·7	89	0·7	32	311	0·7
60 and upwards, .	31	0·9	83	0·5	67	0·8	55	0·4	84	270	0·6
Age not specified, .	.	.	1	.	.	.	.	.	.	1	.
Total, . . .	3,542	100·	15,758	100·	8,701	100·	13,231	100·	2,528	43,760	100·

On pages 8 and 9 will be found a Table showing the ages of persons who emigrated from each county, and of persons belonging to other countries who embarked at Irish ports, distinguishing the sexes and conjugal condition. The only quinquennial age-periods in which the females greatly outnumbered the males are those between fifteen and twenty and between twenty and twenty-five, in the former of which the number of females was 3,860, and of males 1,075, and in the latter there were 11,068 females against 8,305 males. The quinquennial period 20–25 years furnished the largest number of both male and female emigrants—the persons of this age forming 44·3 per cent. of the entire number of emigrants.

Conjugal condition.

Of the 20,568 males who emigrated, 2,300, or 11·2 per cent., were returned as married men or widowers, and of the 23,192 females enumerated, 2,845, or 12·3 per cent., were described as married or widowed. Of the 19,373 persons between the ages of 20 and 25 years, 151 only were married—25 males and 126 females.

Destinations of Emigrants.

Of the 41,232 natives of Ireland who emigrated in 1899, 37,091, or 90·0 per cent., went to the Colonies or to Foreign Countries; and 4,141, or 10·0 per cent., to Great Britain. The United States of America absorbed 35,433, or 85·9 per cent., of the number of these emigrants in 1899, compared with an average of 34,282, or 89·9 per cent., for the four preceding years. The number of emigrants to New Zealand, which had fallen from 322 in 1887 to 87 in 1888, rose to 90 in 1889, and to 126 in 1890, and also showed a small increase in 1891, when 145 persons left for that Colony, but it fell 101 in 1892, and to 94 in 1893: in 1894, it rose again to 114, it then fell gradually to to 36 in 1898, but rose to 56 in 1899. Emigration to Canada shows a decrease in 1899 compared with 1898, the numbers being 397 in 1899, and 456 in 1898. The emigrants to Australia numbered 1,005 in 1899, against 837 in 1898, 676 in 1897, 545 in 1896, 629 in 1895, 457 in 1894, 511 in 1893, 1,216 in 1892, 1,821 in 1891, 2,338 in 1890, 3,038 in 1889, 3,110 in 1888, and 3,896 in 1887. The 200 persons who went to "Other Countries" last year, include 3 who went to France, 2 to Guernsey, 158 to South Africa, and 18 to Buenos Ayres.

Of the 35,433 emigrants to the United States in 1899, Munster contributed 14,579, Connaught 12,784, Ulster 5,444, and Leinster 2,626. Leinster contributed 359 of the 1,005 who left for Australia. Ulster furnished the largest contingent to Canada—257 out of a total of 397.

As before stated, 4,141 natives of Ireland left Ireland in 1899 with the intention of settling permanently in Great Britain; of these, 2,633 left for England and Wales, and 1,508 for Scotland, the averages for the four preceding years being 1,375 and 815, respectively; 57·8 per cent. of the number who went to England and Wales were Ulster people, and of the 1,508 who went to Scotland, no less than 1,226 were also from Ulster, 459 of these being natives of the County of Antrim.

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It may be well to add that the enumerators are instructed to make a return *for each passenger ship* which may sail from any port within their district, and that by "emigrant" *is to be* understood a person who leaves Ireland with the intention of *settling permanently elsewhere*.

TABLE V.—Showing the Destinations of the Emigrants—Natives of Ireland—who left during the years 1895, 1896, 1897, 1898, and 1899; the estimated Population in the middle of each of those years; the Ratio of Emigrants to the Population; and the Proportion per cent. of the total number of Emigrants who left for each Destination.

Years.	To the Colonies and Foreign Countries.						To Great Britain.			General Total.	Estimated Population in the middle of each Year.	Ratio of Emigrants to every 1,000 of the Population.
	America (United States).	Australia.	New Zealand.	Canada.	Other Countries.	Total.	England and Wales.	Scotland.	Total.			
1895	45,298	629	93	732	196	46,948	1,107	648	1,755	48,703	4,574,764	10·6
1896	35,216	545	77	654	589	37,081	1,272	642	1,914	38,995	4,560,378	8·5
1897	28,760	676	61	397	360	30,254	1,454	827	2,281	32,535	4,551,723	7·1
1898	27,855	837	36	456	248	29,432	1,667	1,142	2,809	32,241	4,543,773	7·1
1899	35,433	1,005	56	397	200	37,091	2,633	1,508	4,141	41,232	4,531,051	9·1
	PROPORTION PER CENT.											
1895	93·0	1·3	0·2	1·5	0·4	96·4	2·3	1·3	3·6	100·	–	–
1896	90·3	1·4	0·2	1·7	1·5	95·1	3·3	1·6	4·9	100·	–	–
1897	88·4	2·1	0·2	1·2	1·1	93·0	4·5	2·5	7·0	100·	–	–
1898	86·4	2·6	0·1	1·4	0·8	91·3	5·2	3·5	8·7	100·	–	–
1899	85·9	2·4	0·1	1·0	0·5	89·9	6·4	3·7	10·1	100·	–	–

A Table showing the destinations of the emigrants in 1899, the population in 1891, and the ratio of emigrants to every 1,000 of the population for each county and province, is given at page 12.

A Table showing the occupations and ages of the emigrants of each sex in 1899 will be found on pages 10–11. From this it will be seen that of the 18,830 males aged 15 years and upwards, 14,620, or 77·6 per cent., were returned as "labourers," and of the 21,543 females of these ages, 17,748, or 82·4 per cent., were entered as "servants."

Conclusion. In conclusion, I beg to state that it affords me much gratification to inform your Excellency that those members of the Royal Irish Constabulary and the Dublin Metropolitan Police who were selected as Enumerators of the Emigration Statistics, discharged this duty with their usual efficiency.

I have the honour to be

Your Excellency's faithful servant,

ROBERT E. MATHESON,
Registrar-General.

GENERAL REGISTER OFFICE,
Charlemont House, Dublin,
16th March, 1900.

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Detailed Tables.

I.—Table showing, by Sexes, the Number and Ages of Persons who Emigrated from Ireland during the Year 1899, distinguishing the Conjugal Condition of Adults.

From what County, Province, or Country.			Under 1 Year.	1 and under 5 Years.	5 and under 10.	10 and under 15.	15 and under 20.	20 and under 25.	25 and under 30.	30 and under 35.	35 and under 40.	40 and under 45.	45 and under 50.	50 and under 55.	55 and under 60.	60 Years and upwards.	Ages not specified.	Total Number of Males.	Total Number of Females.	General Total
Carlow,	M.	Single,	2	4	3	1	1	23	26	10	2	.	1	.	.	.	.	73	.	
		Married and Widowed,	.	.	.	.	.	.	.	3	.	2	1	1	.	1	.	8	.	
	F.	Single,	.	2	.	5	9	42	19	4	5	.	.	.	.	.	.	.	86	179
		Married and Widowed,	.	.	.	.	.	.	1	3	2	.	1	.	3	1	.	.	11	
Dublin,	M.	Single,	3	8	9	17	14	84	123	39	17	1	1	.	.	.	.	316	.	
		Married and Widowed,	.	.	.	.	.	.	4	4	10	11	4	4	3	4	.	44	.	
	F.	Single,	2	10	13	9	13	76	53	12	5	.	.	.	.	.	.	.	191	612
		Married and Widowed,	.	.	.	.	.	.	11	14	12	10	3	8	3	.	.	.	61	
Kildare,	M.	Single,	.	.	.	2	3	27	34	5	2	.	.	.	.	.	.	73	.	
		Married and Widowed,	.	.	.	.	.	.	2	1	2	3	.	1	1	1	.	11	.	
	F.	Single,	.	.	.	.	4	26	15	5	1	.	.	.	.	.	.	.	51	141
		Married and Widowed,	.	.	.	.	.	.	1	2	.	2	.	.	.	1	.	.	6	
Kilkenny,	M.	Single,	.	9	2	5	18	108	53	15	1	3	1	.	.	.	.	215	.	
		Married and Widowed,	.	.	.	.	.	1	3	5	2	3	3	1	.	3	.	21	.	
	F.	Single,	1	4	4	1	23	102	53	6	1	.	.	.	.	.	.	.	175	411
		Married and Widowed,	.	.	.	.	.	2	4	7	5	.	.	6	.	.	.	.	34	
King's,	M.	Single,	1	1	4	2	4	40	30	10	2	2	.	2	.	.	.	98	.	
		Married and Widowed,	.	.	.	.	.	.	.	.	2	3	6	2	1	1	.	15	.	
	F.	Single,	.	3	.	2	15	45	19	5	1	1	.	.	.	.	.	.	91	250
		Married and Widowed,	.	.	.	.	.	1	1	7	6	6	.	4	.	1	.	.	26	
Longford,	M.	Single,	1	2	2	5	6	68	83	23	5	1	1	.	.	.	.	197	.	
		Married and Widowed,	.	.	.	.	.	.	2	1	7	4	2	2	5	2	.	25	.	
	F.	Single,	2	5	7	1	39	143	50	6	1	2	.	.	.	.	.	.	256	388
		Married and Widowed,	.	.	.	.	.	.	3	7	3	7	2	2	3	1	.	.	28	
Louth,	M.	Single,	.	4	3	4	12	41	36	17	7	3	.	.	.	.	.	127	.	
		Married and Widowed,	.	.	.	.	.	.	.	1	6	4	3	2	4	2	.	22	.	
	F.	Single,	.	3	2	5	11	46	28	6	3	.	.	1	.	.	.	.	105	254
		Married and Widowed,	.	.	.	.	.	2	2	6	6	2	2	2	.	2	.	.	24	
Meath,	M.	Single,	3	5	7	7	5	54	54	24	4	1	1	.	.	.	.	165	.	
		Married and Widowed,	.	.	.	.	.	1	2	3	3	3	1	1	.	1	.	15	.	
	F.	Single,	1	4	7	2	18	66	29	12	.	1	.	.	.	.	.	.	141	320
		Married and Widowed,	.	.	.	.	.	.	5	5	5	6	1	1	4	2	.	.	29	
Queen's,	M.	Single,	.	1	1	2	1	50	36	16	3	1	1	.	.	1	.	113	.	
		Married and Widowed,	.	.	.	.	.	.	1	1	1	3	.	3	2	4	.	15	.	
	F.	Single,	.	3	4	1	24	69	27	8	4	1	.	.	.	.	.	.	141	269
		Married and Widowed,	.	.	.	.	.	.	.	3	5	2	.	.	.	1	.	.	11	
Westmeath,	M.	Single,	.	1	5	1	3	20	24	7	2	.	.	.	.	.	.	63	.	
		Married and Widowed,	.	.	.	.	.	.	.	5	.	.	1	1	.	.	.	7	.	
	F.	Single,	1	.	1	1	3	33	23	5	.	2	.	.	.	.	.	.	69	180
		Married and Widowed,	.	.	.	.	.	.	4	2	2	2	.	.	1	.	.	.	11	
Wexford,	M.	Single,	1	.	3	5	9	56	44	14	4	4	2	.	.	.	.	142	.	
		Married and Widowed,	.	.	.	.	.	1	4	2	3	4	4	3	1	1	.	23	.	
	F.	Single,	.	3	4	5	19	67	26	3	4	3	.	.	.	.	.	.	134	325
		Married and Widowed,	.	.	.	.	.	2	1	7	4	5	4	2	.	1	.	.	26	
Wicklow,	M.	Single,	.	.	.	2	2	8	13	1	1	.	.	.	.	.	.	27	.	
		Married and Widowed,	.	.	.	.	.	.	2	1	.	2	.	1	.	.	.	6	.	
	F.	Single,	.	1	.	.	2	8	7	2	1	.	.	.	.	.	.	.	21	54
		Married and Widowed,	.	.	.	.	.	.	1	1	.	.	.	1	.	.	.	.	3	
Total of Leinster.	M.	Single,	11	35	39	53	78	579	556	181	50	16	8	2	.	1	.	1,609	.	
		Married and Widowed,	.	.	.	.	.	3	20	27	36	42	25	22	17	20	.	212	.	3,461
	F.	Single,	7	38	42	32	180	723	329	74	24	10	.	2	.	.	.	.	1,461	
		Married and Widowed,	.	.	.	.	.	7	34	64	50	42	13	26	14	10	.	.	260	
Clare,	M.	Single,	2	13	7	4	27	360	218	33	14	4	.	.	.	.	.	682	.	
		Married and Widowed,	.	.	.	.	.	1	.	5	8	4	3	4	2	2	.	29	.	
	F.	Single,	2	10	9	9	148	459	145	8	4	3	.	1	.	.	.	.	778	1,460
		Married and Widowed,	.	.	.	.	.	.	2	10	28	4	6	7	3	3	.	.	63	
Cork,	M.	Single,	12	44	53	44	125	1,530	1,013	132	38	10	3	2	.	1	.	3,037	.	
		Married and Widowed,	.	.	.	.	.	.	10	19	38	31	20	33	18	26	.	195	.	
	F.	Single,	15	46	58	33	563	2,076	571	69	15	5	.	2	1	.	.	.	3,454	6,491
		Married and Widowed,	.	.	.	.	.	2	13	65	105	32	31	43	25	9	.	.	325	
Kerry,	M.	Single,	3	10	15	10	61	806	458	47	16	4	1	2	.	.	.	1,433	.	
		Married and Widowed,	.	.	.	.	.	.	.	7	9	12	7	8	11	4	.	58	.	
	F.	Single,	10	15	20	14	327	1,055	227	33	8	1	.	.	.	.	.	.	1,710	3,201
		Married and Widowed,	.	.	.	.	.	.	5	23	30	14	7	23	11	5	.	.	118	
Limerick,	M.	Single,	4	10	17	9	17	231	165	28	14	6	4	2	.	.	.	507	.	
		Married and Widowed,	.	.	.	.	.	.	1	4	3	10	4	6	4	4	.	36	.	
	F.	Single,	4	8	11	9	59	267	74	13	7	2	.	.	.	.	.	.	454	1,047
		Married and Widowed,	.	.	.	.	.	1	6	7	10	10	3	5	4	3	1	.	50	
Tipperary,	M.	Single,	4	13	23	12	33	399	273	61	9	6	2	.	.	.	.	835	.	
		Married and Widowed,	.	.	.	.	.	1	3	6	10	8	9	3	3	8	.	51	.	
	F.	Single,	7	8	24	20	141	417	146	19	2	.	.	.	.	1	.	.	785	1,785
		Married and Widowed,	.	.	.	.	.	5	8	19	30	13	4	18	8	5	.	.	110	
Waterford,	M.	Single,	3	13	9	9	40	203	127	32	12	6	1	2	.	.	.	457	.	
		Married and Widowed,	.	.	.	.	.	1	3	8	14	8	1	7	3	7	.	52	.	
	F.	Single,	8	13	13	7	64	263	82	22	3	1	.	.	.	.	.	.	476	1,009
		Married and Widowed,	.	.	.	.	.	6	8	15	14	5	3	5	2	5	.	.	63	
Total of Munster.	M.	Single,	28	103	124	88	303	3,559	2,254	333	103	36	11	8	.	1	.	6,951	.	
		Married and Widowed,	.	.	.	.	.	3	17	49	82	73	44	61	41	51	.	421	.	13,588
	F.	Single,	46	100	135	92	1,302	4,537	1,225	164	39	12	.	3	1	1	.	.	7,657	
		Married and Widowed,	.	.	.	.	.	14	42	139	217	78	51	101	53	30	1	.	729	
Antrim,	M.	Single,	32	113	61	45	55	221	142	54	16	3	1	.	.	.	.	743	.	
		Married and Widowed,	.	.	.	.	.	1	32	40	35	30	12	8	4	3	.	165	.	
	F.	Single,	22	86	53	38	66	149	86	13	4	3	.	.	.	.	.	.	530	1,410
		Married and Widowed,	.	.	.	.	.	31	81	77	41	14	13	13	6	4	.	.	280	
Armagh,	M.	Single,	8	48	30	18	25	98	71	26	10	.	.	.	.	.	.	334	.	
		Married and Widowed,	.	.	.	.	.	.	10	15	26	12	11	6	3	1	.	84	.	
	F.	Single,	8	37	18	16	46	87	43	10	1	2	.	1	.	.	.	.	269	687
		Married and Widowed,	.	.	.	.	.	7	27	27	18	8	8	6	2	.	.	.	103	

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I.—Table showing, by Sexes, the Number and Ages of Persons who emigrated from Ireland during the Year 1899, distinguishing the Conjugal Condition of Adults—*continued.*

From what County, Province, or Country.			Under 1 Year.	1 and under 5 Years.	5 and under 10.	10 and under 15.	15 and under 20.	20 and under 25.	25 and under 30.	30 and under 35.	35 and under 40.	40 and under 45.	45 and under 50.	50 and under 55.	55 and under 60.	60 Years and upwards.	Ages not specified.	Total Number of Males.	Total Number of Females	General Total.
Cavan,	M.	Single,	2	19	23	22	38	207	143	48	16	3	2	2	.	1	.	526	.	1,286
		Married and Widowed,	.	.	.	.	.	.	4	12	13	13	9	2	3	6	.	62	.	
	F.	Single,	2	10	22	28	134	270	108	21	6	.	.	.	.	.	.	.	601	
		Married and Widowed,	.	.	.	.	.	5	14	15	21	22	6	6	1	7	.	.	97	
Donegal,	M.	Single,	1	2	3	5	37	224	65	24	9	2	.	1	.	.	.	373	.	1,019
		Married and Widowed,	.	.	.	.	.	2	1	2	2	9	5	7	3	4	.	35	.	
	F.	Single,	.	1	2	4	163	314	66	21	3	2	.	.	.	.	.	.	576	
		Married and Widowed,	.	.	.	.	.	1	1	6	3	6	6	8	2	2	.	.	35	
Down,	M.	Single,	15	57	34	18	27	138	127	46	11	3	2	.	1	.	.	479	.	1,043
		Married and Widowed,	.	.	.	.	.	2	21	32	33	21	17	7	3	3	.	139	.	
	F.	Single,	10	58	23	21	29	77	45	8	1	.	.	1	.	.	.	.	259	
		Married and Widowed,	.	.	.	.	.	11	58	40	22	9	9	9	6	2	.	.	166	
Fermanagh,	M.	Single,	.	2	8	7	15	80	50	8	5	.	.	1	.	.	.	176	.	466
		Married and Widowed,	.	.	.	.	.	1	3	5	3	9	5	3	2	3	.	34	.	
	F.	Single,	2	5	6	8	54	100	32	10	1	.	.	.	.	.	.	.	218	
		Married and Widowed,	.	.	.	.	.	5	5	3	4	6	5	3	2	5	.	.	38	
London-derry,	M.	Single,	3	26	6	6	35	124	67	18	4	4	1	.	.	4	.	294	.	674
		Married and Widowed,	.	.	.	.	.	2	10	12	9	9	3	2	3	4	.	54	.	
	F.	Single,	6	13	11	12	49	111	37	8	3	2	.	1	.	.	.	.	253	
		Married and Widowed,	.	.	.	.	.	10	16	15	8	5	4	7	4	4	.	.	73	
Monaghan,	M.	Single,	3	13	10	9	25	84	64	22	6	5	.	1	.	.	.	242	.	566
		Married and Widowed,	.	.	.	.	.	2	4	13	5	4	10	4	4	2	.	48	.	
	F.	Single,	1	15	6	4	51	105	32	14	2	2	.	1	.	.	.	.	233	
		Married and Widowed,	.	.	.	.	.	2	14	12	4	2	3	3	1	2	.	.	43	
Tyrone,	M.	Single,	14	25	17	19	59	215	109	26	6	2	2	1	.	.	.	497	.	1,149
		Married and Widowed,	.	.	.	.	.	9	11	11	15	7	13	12	7	5	.	81	.	
	F.	Single,	5	18	17	24	106	193	85	13	6	1	.	.	.	.	.	.	468	
		Married and Widowed,	.	.	.	.	.	10	22	16	5	5	16	13	7	9	.	.	103	
Total of Ulster,	M.	Single,	78	305	192	149	316	1,391	838	272	85	29	8	6	1	1	.	3,664	.	8,701
		Married and Widowed,	.	.	.	.	.	10	96	142	141	114	85	51	32	31	.	702	.	
	F.	Single,	56	238	158	155	669	1,406	534	118	27	12	.	4	.	.	.	.	3,397	
		Married and Widowed,	.	.	.	.	.	82	238	211	126	77	70	68	31	35	.	.	938	
Galway,	M.	Single,	8	25	24	21	87	741	430	64	38	6	4	4	1	.	.	1,453	.	3,953
		Married and Widowed,	.	.	.	.	.	1	5	15	20	14	13	11	14	.	.	93	.	
	F.	Single,	7	26	35	33	504	1,268	313	33	17	3	.	.	.	.	.	.	2,239	
		Married and Widowed,	.	.	.	.	.	2	6	29	44	27	11	25	18	6	.	.	168	
Leitrim,	M.	Single,	2	6	10	14	33	159	82	24	12	2	.	.	.	.	.	344	.	951
		Married and Widowed,	.	.	.	.	.	.	.	3	2	2	4	6	3	3	.	23	.	
	F.	Single,	.	7	11	12	168	248	63	20	1	1	.	2	.	.	.	.	533	
		Married and Widowed,	.	.	.	.	.	.	4	9	5	9	7	9	5	3	.	.	51	
Mayo,	M.	Single,	6	34	31	37	83	762	575	70	24	11	1	4	.	.	.	1,638	.	4,898
		Married and Widowed,	.	.	.	.	.	3	8	25	25	13	20	6	5	.	.	105	.	
	F.	Single,	13	49	45	21	607	1,696	408	50	18	2	.	.	.	.	.	.	2,909	
		Married and Widowed,	.	.	.	.	.	1	12	49	79	27	24	25	21	8	.	.	246	
Roscommon	M.	Single,	1	9	20	3	35	347	240	43	16	4	4	3	.	.	.	725	.	1,958
		Married and Widowed,	.	.	.	.	.	1	1	6	15	10	8	10	7	6	.	64	.	
	F.	Single,	5	14	15	11	219	607	177	22	8	5	.	.	.	.	.	.	1,083	
		Married and Widowed,	.	.	.	.	.	.	4	14	24	6	9	18	8	3	.	.	86	
Sligo,	M.	Single,	3	14	30	10	34	257	170	34	7	5	2	.	.	.	.	566	.	1,471
		Married and Widowed,	.	.	.	.	.	1	2	2	11	15	6	4	5	5	.	51	.	
	F.	Single,	7	11	18	16	163	414	107	24	7	3	.	.	.	.	.	.	770	
		Married and Widowed,	.	.	.	.	.	1	6	18	24	16	4	9	4	2	.	.	84	
Total of Connaught,	M.	Single,	20	88	115	88	272	2,266	1,497	235	97	28	11	11	1	.	.	4,726	.	13,231
		Married and Widowed,	.	.	.	.	.	2	7	24	68	72	45	53	32	33	.	356	.	
	F.	Single,	32	107	124	93	1,661	4,233	1,068	149	51	14	.	2	.	.	.	.	7,534	
		Married and Widowed,	.	.	.	.	.	4	32	119	176	86	55	86	56	22	.	.	635	
Total Natives of Ireland.	M.	Single,	137	531	470	375	969	7,793	5,145	1,021	338	102	38	27	2	3	.	16,951	.	41,232
		Married and Widowed,	.	.	.	.	.	18	140	242	327	301	199	187	122	135	.	1,671	.	
	F.	Single,	141	483	459	372	3,832	10,899	3,156	506	141	48	.	11	1	1	.	.	20,049	
		Married and Widowed,	.	.	.	.	.	107	346	533	569	382	192	281	154	97	1	.	2,562	
Persons belonging to other Countries.																				
Great Britain,	M.	Single,	14	86	73	49	95	442	330	48	16	6	3	1	.	.	.	1,163	.	2,302
		Married and Widowed,	.	.	.	.	.	6	86	134	111	99	67	45	22	27	.	669	.	
	F.	Single,	13	84	61	34	96	42	22	5	2	1	.	.	.	.	.	.	292	
		Married and Widowed,	.	.	.	.	.	19	104	66	31	26	11	8	8	6	.	.	278	
The United States, Canada, and the West Indies.	M.	Single,	.	.	.	.	1	1	13	13	1	.	1	.	.	.	.	30	.	40
		Married and Widowed,	.	.	.	.	.	.	.	3	2	3	.	.	1	.	.	9	.	
	F.	Single,	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
		Married and Widowed,	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	
Other Countries.	M.	Single,	.	.	1	2	10	42	49	16	3	1	1	.	.	.	.	125	.	166
		Married and Widowed,	.	.	.	.	.	1	2	8	12	12	8	6	1	1	.	51	.	
	F.	Single,	.	.	1	1	.	1	2	1	.	.	.	.	.	.	.	.	6	
		Married and Widowed,	.	.	.	.	.	.	1	.	2	1	.	.	.	.	.	.	4	
General Total,	M.	Single,	151	617	544	426	1,075	8,280	5,537	1,098	385	109	43	28	2	3	.	18,268	.	43,760
		Married and Widowed,	.	.	.	.	.	25	200	387	483	415	274	238	146	163	.	2,300	.	
	F.	Single,	154	567	521	407	3,960	10,942	3,180	511	143	49	.	11	1	1	.	.	20,347	
		Married and Widowed,	.	.	.	.	.	126	451	599	602	309	203	289	162	103	1	.	2,845	

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II.—TABLE showing the OCCUPATIONS and AGES of MALE and

OCCUPATIONS.	AGES.									
	Under 1 year.	1 and under 5 years.	5 and under 10.	10 and under 15.	15 and under 20.	20 and under 25.	25 and under 30.	30 and under 35.	35 and under 40.	40 and under 45.
MALES.										
Bakers and Confectioners,	.	.	.	.	1	6	12	3	6	4
Blacksmiths,	.	.	.	.	2	19	12	8	2	1
Boiler Makers and Engine Fitters,	.	.	.	.	5	26	29	13	12	12
Bookbinders,	.	.	.	.	.	1	.	1	.	.
Boot and Shoe Makers,	.	.	.	.	2	12	20	8	9	5
Bricklayers,	.	.	.	.	1	11	6	3	2	1
Butchers,	.	.	.	.	1	10	5	2	2	1
Cabinetmakers and Upholsterers,	.	.	.	.	.	2	1	.	1	1
Carpenters and Joiners,	.	.	.	.	7	43	62	30	17	9
Clerks and Accountants,	.	.	.	.	23	152	182	104	40	21
Coachmakers,	.	.	.	.	.	1	.	.	.	.
Commercial Travellers,	.	.	.	.	.	7	5	8	5	6
Coopers,	.	.	.	.	3	3	3	1	1	2
Cutlers,	.	.	.	.	1	.	.	.	.	.
Dealers, Hawkers, and Pedlars,	.	.	.	.	1	1	6	10	5	4
Engine Drivers, Stokers, and Firemen,	.	.	.	.	2	43	50	24	17	12
Engineers,	.	.	.	.	2	29	45	34	26	15
Engravers,	.	.	.	.	1	.	.	.	.	.
Farmers,	.	.	.	.	37	270	124	52	32	45
Gardeners,	.	.	.	.	.	6	5	2	1	1
Goldsmiths, Silversmiths, and Jewellers,	.	.	.	.	.	2	2	1	2	.
Hatters,	.	.	.	.	.	.	.	.	.	.
Labourers,	.	.	.	.	822	6,998	4,636	973	473	270
Masons and Paviors,	.	.	.	.	.	4	8	1	1	1
Mechanics,	.	.	.	.	.	14	13	8	9	4
Merchants,	.	.	.	.	.	.	1	.	2	4
Millers,	.	.	.	.	.	.	1	.	1	2
Millworkers,	.	.	.	.	2	4	6	3	1	2
Miners,	.	.	.	.	.	3	.	.	2	1
Painters, Paperhangers, Plumbers, and Glaziers,	.	.	.	.	6	29	41	15	8	1
Plasterers,	.	.	.	.	1	3	6	1	2	1
Printers,	.	.	.	.	1	7	6	1	1	2
Professional men,	.	.	.	.	.	6	10	22	18	4
Railway Labourers, Navvies, and Platelayers,	.	.	.	.	.	4	3	1	4	2
Saddlers and Harnessmakers,	.	.	.	.	.	9	13	2	1	2
Sawyers,	.	.	.	.	.	.	.	.	.	.
Schoolmasters and Teachers,	.	.	.	.	1	5	6	.	.	.
Seamen,	.	.	.	.	33	208	146	73	57	45
Servants,	.	.	.	.	14	29	20	8	6	13
Shipbuilders and Shipwrights,	.	.	.	.	.	3	4	2	3	6
Shopkeepers,	.	.	.	.	.	3	.	.	1	4
Shop Assistants,	.	.	.	.	13	122	60	19	7	3
Slaters and Tilers,	.	.	.	.	.	2	3	.	1	.
Smiths, General,	.	.	.	.	1	5	4	1	1	.
Spinners and Weavers,	.	.	.	.	.	15	3	2	.	.
Stonecutters, Polishers, and Quarriers,	.	.	.	.	.	6	2	3	1	.
Tailors,	.	.	.	.	1	14	8	5	1	1
Wheelwrights,	.	.	.	.	.	2	.	.	.	.
Whitesmiths and Tinsmiths,	.	.	.	.	.	.	2	1	.	.
Wood Turners,	.	.	.	.	.	.	.	.	.	.
Trades not before specified,	.	.	.	.	1	2	.	.	1	.
All other occupations,	.	.	.	4	10	30	25	14	9	8
Unspecified, including children,	151	617	544	422	80	134	141	26	16	8
Total Males,	151	617	544	426	1,075	8,305	5,737	1,485	807	524
FEMALES.										
Dressmakers and Milliners,	.	.	.	1	30	117	79	21	1	1
Farm Servants,	.	.	.	.	.	.	.	.	.	.
Governesses, Teachers, and Schoolmistresses,	.	.	.	.	2	10	8	2	1	.
Housekeepers,	.	.	.	.	.	10	22	30	35	21
Laundresses,	.	.	.	.	.	2	.	.	1	.
Machinists,	.	.	.	.	1	2	1	.	.	.
Millworkers,	.	.	.	.	5	31	11	2	.	.
Seamstresses and Shirtmakers,	.	.	.	.	17	75	43	3	2	.
Servants,	.	.	.	.	3,640	10,561	2,958	414	120	38
Shopkeepers,	.	.	.	.	.	2	1	1	.	1
Shop Assistants,	.	.	.	.	5	14	7	7	.	.
Trades not before specified,	.	.	.	.	.	.	1	.	.	.
All other occupations,	.	.	.	1	5	5	8	4	1	1
Unspecified (including wives and children),	154	567	521	405	155	239	493	626	584	296
Total Females,	154	567	521	407	3,860	11,068	3,631	1,110	745	358
GENERAL TOTAL,	305	1,184	1,065	833	4,935	19,373	9,368	2,595	1,552	882

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FEMALE EMIGRANTS who left Ireland during the year 1899.

Ages.				Ages Unspecified.	General Total.	Natives of Ireland.				Persons belonging to other Countries.	Occupations.
45 and under 50.	50 and under 55.	55 and under 60.	60 and upwards.			Leinster.	Munster.	Ulster.	Connaught.		
											MALES.
1	.	.	.	.	33	.	7	23	2	1	Bakers and Confectioners.
.	1	.	.	.	45	4	9	30	2	.	Blacksmiths.
5	1	1	1	.	105	2	2	12	.	89	Boiler Makers and Engine Fitters.
.	1	.	.	.	3	.	2		.	1	Bookbinders.
5	2	.	1	.	64	1	12	43	.	8	Boot and Shoe Makers.
.	.	.	.	.	24	.	.	19	1	4	Bricklayers.
.	1	.	.	.	22	1	5	13	.	3	Butchers.
1	.	.	.	.	6	.	.	4	.	2	Cabinetmakers and Upholsterers.
11	1	2	.	.	182	8	13	125	10	26	Carpenters and Joiners.
11	8	2	1	.	544	143	140	156	54	51	Clerks and Accountants.
.	.	.	.	.	1	.	.	1	.	.	Coachmakers.
2	3	1	1	.	38	3	.	2	1	32	Commercial Travellers.
.	1	.	.	.	14	.	4	4	1	5	Coopers.
.	.	.	.	.	1	.	.	.	.	1	Cutlers.
5	.	.	.	.	32	.	1	5	.	26	Dealers, Hawkers, and Pedlars.
12	2	.	.	.	162	3	7	79	3	70	Engine Drivers, Stokers, and Firemen.
6	1	.	1	.	159	3	5	83	.	68	Engineers.
.	.	.	.	.	1	.	.	1	.	.	Engravers.
35	53	36	62	.	746	45	136	471	82	12	Farmers.
1	1	.	.	.	17	2	3	9	.	3	Gardeners.
.	.	.	.	.	7	.	1	4	.	2	Goldsmiths, Silversmiths, and Jewellers.
.	.	.	.	.	.	.	.	.	.	.	Hatters.
154	141	80	73	.	14,620	1,401	6,492	2,087	4,526	114	Labourers.
1	.	2	2	.	20	3	.	6	1	10	Masons and Paviors.
2	3	.	.	.	53	6	5	31	3	8	Mechanics.
.	2	.	.	.	9	2	.	3	2	2	Merchants.
.	.	.	.	.	4	.	1	1	.	2	Millers.
1	.	2	.	.	21	.	.	15	.	6	Millworkers.
.	.	.	1	.	7	.	.	.	1	6	Miners.
1	2	1	1	.	105	4	12	60	3	26	Painters, Paperhangers, Plumbers, and Glaziers.
.	.	.	.	.	14	1	1	10	.	2	Plasterers.
1	.	.	.	.	19	1	.	6	2	10	Printers.
2	2	1	.	.	65	9	23	9	16	8	Professional men.
1	2	.	1	.	18	.	1	1	.	16	Railway Labourers, Navvies, and Platelayers.
.	1	.	.	.	28	.	2	22	.	4	Saddlers and Harnessmakers.
.	.	.	.	.	.	.	.	.	.	.	Sawyers.
2	1	1	.	.	16	1	3	4	2	6	Schoolmasters and Teachers.
35	25	9	7	.	638	2	36	7	3	590	Seamen.
2	1	2	.	.	95	7	13	30	7	38	Servants.
1	.	2	5	.	26	.	.	3	.	23	Shipbuilders and Shipwrights.
1	.	1	.	.	10	1	2	3	.	4	Shopkeepers.
3	2	.	.	.	229	15	20	163	21	10	Shop Assistants.
.	.	.	.	.	6	.	.	.	.	6	Slaters and Tilers.
1	.	.	.	.	13	.	3	6	.	4	Smiths, General.
2	1	.	.	.	23	.	2	17	.	4	Spinners and Weavers.
.	.	.	.	.	12	1	.	7	.	4	Stonecutters, Polishers, and Quarriers.
4	1	2	.	.	37	2	5	22	1	7	Tailors.
.	.	.	.	.	2	.	.	.	.	2	Wheelwrights.
.	.	1	.	.	4	.	.	.	.	4	Whitesmiths and Tinsmiths.
.	.	.	.	.	.	.	.	.	.	.	Wood Turners.
1	1	.	.	.	6	.	.	2	.	4	Trades not before specified.
6	3	1	1	.	111	3	16	19	1	72	All other occupations.
1	2	1	8	.	2,151	147	388	748	317	551	Unspecified, including children.
317	266	148	166	.	20,568	1,821	7,372	4,366	5,062	1,947	Total Males.
											FEMALES.
2	1	.	.	.	253	13	49	159	29	3	Dressmakers and Milliners.
.	.	.	.	.	.	.	.	.	.	.	Farm Servants.
.	.	.	1	.	24	1	3	16	2	2	Governesses, Teachers, and Schoolmistresses.
11	32	43	33	.	241	22	84	57	63	15	Housekeepers.
.	.	.	.	.	3	.	.	3	.	.	Laundresses.
.	.	.	.	.	4	.	.	4	.	.	Machinists.
.	.	.	.	.	49	.	.	47	.	2	Millworkers.
.	1	.	.	.	141	1	.	137	3	.	Seamstresses and Shirtmakers.
1	12	4	.	.	17,748	1,377	7,030	2,321	7,040	80	Servants.
.	.	1	.	.	6	.	3	3	.	.	Shopkeepers.
.	.	.	.	.	33	7	1	21	4	.	Shop Assistants.
.	.	.	.	.	1	.	.	.	1	.	Trades not before specified.
.	1	.	.	.	26	1	5	6	.	14	All other occupations.
189	253	111	70	1	4,663	399	1,211	1,561	1,027	465	Unspecified (including wives and children).
203	300	163	104	1	23,192	1,721	8,386	4,335	8,169	581	Total Females.
520	566	311	270	1	43,760	3,542	15,758	8,701	13,231	2,528	GENERAL TOTAL.

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III.—TABLE showing the Destinations of the Emigrants—Natives of Ireland—from each County and Province during the year 1899, and the number of Emigrants to every 1,000 of the (1891) Population.

FROM WHAT COUNTY OR PROVINCE.	To Foreign Countries and the Colonies.						To Great Britain.			General Total.	Population in 1891.	No. of Emigrants to every 1,000 of the (1891) Population.
	America (United States).	Australia.	New Zealand.	Canada.	Other Countries.*	Total.	England and Wales.	Scotland.	Total.			
Carlow,	163	8	.	1	1	173	5	.	5	178	40,936	4·3
Dublin,	373	142	2	30	40	587	16	9	25	612	419,216	1·5
Kildare,	109	20	.	5	5	139	2	.	2	141	70,206	2·0
Kilkenny,	243	13	.	3	5	264	166	5	171	435	87,261	5·0
King's,	227	1	.	2	.	230	.	.	.	230	65,563	3·5
Longford,	415	67	.	8	13	503	1	2	3	506	52,647	9·6
Louth, and Drogheda, County of Town,	228	4	1	3	5	241	24	13	37	278	71,038	3·9
Meath,	268	62	.	5	6	341	9	.	9	350	76,987	4·5
Queen's,	264	10	2	4	.	280	.	.	.	280	64,883	4·3
Westmeath,	119	10	.	11	6	146	3	1	4	150	65,109	2·3
Wexford,	176	10	.	4	1	191	130	4	134	325	111,778	2·9
Wicklow,	41	12	.	3	.	56	.	1	1	57	62,136	0·9
Total of Leinster,	2,626	359	5	79	82	3,151	356	35	391	3,542	1,187,760	3·0
Clare,	1,462	47	3	.	7	1,519	32	1	33	1,552	124,483	12·5
Cork,	6,837	10	10	4	.	6,861	124	26	150	7,011	438,432	16·0
Kerry,	3,229	48	1	3	3	3,284	20	15	35	3,319	179,136	18·5
Limerick,	859	53	6	7	11	936	73	38	111	1,047	158,912	6·6
Tipperary,	1,469	81	2	14	28	1,594	180	7	187	1,781	173,188	10·3
Waterford,	723	19	1	2	4	749	293	6	299	1,048	98,251	10·7
Total of Munster,	14,579	258	23	30	53	14,943	722	93	815	15,758	1,172,402	13·4
Antrim,	643	34	11	100	19	807	442	459	901	1,708	428,128	4·0
Armagh,	318	18	.	11	3	350	230	210	440	790	143,289	5·5
Cavan,	1,103	77	3	14	7	1,204	39	43	82	1,286	111,917	11·5
Donegal,	1,001	.	.	11	.	1,012	5	2	7	1,019	185,635	5·5
Down,	331	14	1	23	15	384	492	167	659	1,043	267,059	3·9
Fermanagh,	364	2	.	29	1	396	27	43	70	466	74,170	6·3
Londonderry,	438	22	7	12	3	482	99	93	192	674	152,009	4·4
Monaghan,	379	.	2	14	3	398	90	78	168	566	86,206	6·6
Tyrone,	867	6	.	43	4	920	98	131	229	1,149	171,401	6·7
Total of Ulster,	5,444	173	24	257	55	5,953	1,522	1,226	2,748	8,701	1,619,814	5·4
Galway,	3,880	54	1	7	2	3,944	6	3	9	3,953	214,712	18·4
Leitrim,	877	13	1	5	.	896	4	51	55	951	78,618	12·1
Mayo,	4,798	78	.	4	1	4,881	5	12	17	4,898	219,034	22·4
Roscommon,	1,929	20	.	5	2	1,956	1	1	2	1,958	114,397	17·1
Sligo,	1,300	50	2	10	5	1,367	17	87	104	1,471	98,013	15·0
Total of Connaught,	12,784	215	4	31	10	13,044	33	154	187	13,231	724,774	18·3
Total, Natives of Ireland,	35,433	1,005	56	397	200	37,091	2,633	1,508	4,141	41,232	4,704,750	8·8

* Of the 200 emigrants to "Other Countries" 158 were returned as having gone to South Africa, 18 to Buenos Ayres, 15 to "South America," 3 to France, 2 to Guernsey, 2 to West Africa, 1 to Jersey, and 1 to the Falkland Islands.

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IV.—Table showing the Number of Male and Female Emigrants—Natives of Ireland—who left Irish Ports, during each month of the year 1899.

Ports.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		The Year 1899.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Males.	Females.	Total.
Ballina,	.	.	2	3	2	6	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	11	16
Belfast,	106	41	176	116	176	122	196	157	199	167	159	122	91	52	158	121	190	197	213	228	217	184	192	125	2,078	1,632	3,705
Coleraine,	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	2
Cork, Cork,	12	2	7	4	22	3	26	7	25	2	15	9	11	1	14	3	11	1	8	2	5	.	5	4	161	38	199
Cork, Queenstown,	181	91	287	227	772	722	3,066	3,934	2,233	3,237	933	1,119	704	734	1,028	1,564	1,297	2,676	747	1,543	418	521	177	167	11,843	16,535	28,378
Drogheda,	.	.	1	1	6	2	11	17	24	18	9	2	4	3	3	6	3	11	3	2	10	8	8	5	82	75	157
Dublin,	56	41	58	25	108	50	161	100	142	69	123	69	116	68	99	63	105	80	101	53	56	37	96	37	1,221	692	1,913
Dundalk,	.	.	2	.	15	5	27	35	51	40	14	18	12	12	38	44	25	45	8	22	4	3	3	3	199	227	426
Galway,	.	.	.	.	.	.	112	101	67	89	22	81	20	54	12	31	11	29	.	.	.	.	.	.	244	385	629
Greenore,	9	8	3	.	16	16	68	78	60	64	11	17	12	8	14	12	15	24	11	19	9	12	8	4	236	262	498
Larne,	.	.	1	1	2	.	5	.	2	.	.	.	.	.	.	.	.	.	.	.	2	.	1	1	13	2	15
Limerick,	1	1	.	.	6	3	.	.	.	.	1	1	1	.	4	.	12	3	5	6	.	.	.	.	30	14	44
Londonderry,	13	7	69	39	202	164	476	546	297	305	117	171	98	91	141	174	152	344	83	157	28	37	34	49	1,710	2,084	3,794
Newry	9	5	8	8	11	11	8	11	10	10	3	16	11	12	5	7	12	15	12	7	7	7	1	5	97	114	211
Portrush,	4	6	.	.	.	.	.	.	.	2	4	6	1	.	2	.	.	.	.	.	.	.	.	.	11	14	25
Sligo,	6	1	2	1	6	11	7	13	6	4	14	12	1	4	.	.	2	11	3	5	6	6	.	3	53	71	124
Waterford,	30	20	30	27	43	21	66	33	74	37	53	33	65	25	81	56	55	53	54	59	35	48	30	20	616	432	1,048
Westport,	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Wexford,	1	.	2	.	.	1	2	.	4	5	3	3	1	.	.	.	1	3	4	3	6	8	1	.	25	23	48
General Total,	428	223	648	452	1,387	1,137	4,234	5,034	3,194	4,049	1,481	1,679	1,148	1,064	1,599	2,081	1,891	3,492	1,252	2,106	803	871	556	423	18,621	22,611	41,232
	651		1,100		2,524		9,268		7,243		3,160		2,212		3,680		5,383		3,358		1,674		979		41,232		

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DUBLIN CASTLE,
19*th March*, 1900.

SIR,

I have to acknowledge the receipt of your Letter of the 16th instant, forwarding, for submission to His Excellency the Lord Lieutenant, the Emigration Statistics of Ireland for the year 1899.

I am,

Sir,

Your obedient Servant,

J. B. DOUGHERTY.

The Registrar-General,
Charlemont House,
Rutland Square.

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AD 22

GENERAL ABSTRACT

OF

MARRIAGES, BIRTHS, AND DEATHS

REGISTERED IN

ENGLAND

IN THE YEAR

1899.

Presented to both Houses of Parliament by Command of Her Majesty.

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ENGLAND.—MARRIAGES, BIRTHS, and DEATHS registered in ENGLA

The numbers of Births and Deaths in this Table are obtained from the Quarterly Returns furnished
presented to Parliament in the 6

REGISTRATION DIVISIONS AND COUNTIES.*	POPULATION.		MARRIAGES.		BIRTHS.	DEATHS.	BIRTHS.		DEATHS.	
	ENUMERATED on 6th April 1891.†	ESTIMATED to the middle of 1899.‡	Number.	Persons Married.			Males.	Females.	Males.	Fem
ENGLAND	29,002,525	31,742,588	261,963	523,926	928,640	581,824	473,196	455,444	299,664	282,
DIVISIONS.										
I. LONDON	4,211,743	4,546,752	41,853	83,706	133,120	88,047	68,034	65,086	45,357	42,6
II. SOUTH EASTERN	2,867,078	3,213,325	24,044	48,088	80,182	52,234	40,760	39,422	26,946	25,2
III. SOUTH MIDLAND	1,863,883	2,150,423	15,149	30,298	56,916	32,865	29,086	27,830	16,640	16,2
IV. EASTERN ...	1,575,311	1,816,872	13,213	26,426	52,262	30,182	26,898	25,364	15,667	14,5
V. SOUTH WESTERN	1,855,262	1,881,012	13,978	27,956	47,006	31,925	24,114	22,892	15,855	16,0
VI. WEST MIDLAND	3,305,841	3,489,279	29,913	59,826	111,163	65,231	56,306	54,857	33,698	31,5
VII. NORTH MIDLAND	1,808,494	1,954,097	16,457	32,914	59,564	34,077	30,293	29,271	17,520	16,5
VIII. NORTH WESTERN	4,664,749	5,153,125	43,811	87,622	153,949	106,132	78,096	75,853	54,421	51,7
IX. YORKSHIRE ...	3,212,188	3,497,672	30,350	60,700	104,528	64,437	53,288	51,240	33,748	30,6
X. NORTHERN ...	1,863,166	2,079,176	17,651	35,302	69,308	39,185	35,268	34,040	20,502	18,6
XI. WELSH	1,774,810	1,960,855	15,544	31,088	60,642	37,509	31,053	29,589	19,310	18,1
I. LONDON.										
1 LONDON	4,211,743	4,546,752	41,853	83,706	133,120	88,047	68,034	65,086	45,357	42,6
II. SOUTH EASTERN.										
2 SURREY	575,845	680,383	4,986	9,972	16,842	10,269	8,507	8,335	5,321	4,9
3 KENT	806,508	892,012	7,017	14,034	23,566	14,875	11,958	11,608	7,679	7,1
4 SUSSEX	551,138	606,922	4,223	8,446	13,861	9,595	7,048	6,813	4,719	4,6
5 HAMPSHIRE . ..	666,460	748,603	5,792	11,584	19,000	13,207	9,757	9,243	6,981	6,2
6 BERKSHIRE	267,127	285,405	2,026	4,052	6,913	4,288	3,490	3,423	2,246	2,0
III. SOUTH MIDLAND.										
7 MIDDLESEX	574,999	803,719	5,309	10,618	21,963	11,850	11,299	10,664	5,957	5,8
8 HERTFORDSHIRE ..	216,181	225,219	1,615	3,230	5,701	3,673	2,920	2,781	1,923	1,7
9 BUCKINGHAMSHIRE ..	163,195	171,147	1,203	2,406	4,385	2,649	2,257	2,128	1,339	1,3
10 OXFORDSHIRE	189,927	192,716	1,315	2,630	4,543	2,899	2,340	2,203	1,470	1,4
11 NORTHAMPTONSHIRE	308,072	334,829	2,721	5,442	9,801	5,178	4,913	4,888	2,679	2,4
12 HUNTINGDONSHIRE ..	50,289	47,765	329	658	1,215	791	585	630	403	
13 BEDFORDSHIRE	164,997	175,497	1,213	2,426	4,328	2,858	2,221	2,107	1,383	1,4
14 CAMBRIDGESHIRE ..	196,223	199,531	1,444	2,888	4,980	2,967	2,551	2,429	1,486	1,4
IV. EASTERN.										
15 ESSEX	761,191	937,151	7,275	14,550	30,099	16,588	15,532	14,567	8,745	7,
16 SUFFOLK	353,758	360,120	2,539	5,078	9,529	5,788	4,893	4,636	2,972	2,
17 NORFOLK	460,362	469,601	3,399	6,798	12,634	7,806	6,473	6,161	3,950	3,

* NOTE—*Registration* or *Union Counties* consist of groups of Registration Districts, which are generally co-extensive with the Poor Law Unions. Th
of the District, or the greater part of the Population is located. The Boundaries of Registrat
† Corrected for changes in boundaries to the end of the year 1899. At a Census of London, which was taken on 29th March 1896, the population was 4,411,
‡ The estimate of the population of London for the middle of the year 1899 has been calculated on the assumption that the rate of increase that prevailed betw
on the assumption that the rate of increase or decrease that prevailed between

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and in the Registration Divisions and Counties, in the Year **1899.**

the Local Registrars, and will probably be found to differ slightly from the revised figures, to be hereafter Annual Report of the Registrar-General.

MARRIAGES.				BIRTHS.				DEATHS.			
Registered in the Quarter ending the last Day of				Registered in the Quarter ending the last Day of				Registered in the Quarter ending the last Day of			
March.	June.	Sept.	Dec.	March.	June.	Sept.	Dec.	March.	June.	Sept.	Dec.
44,456	72,245	71,929	73,333	231,511	239,295	231,593	226,241	147,697	131,516	153,621	148,990
6,845	11,059	12,308	11,641	34,942	33,539	32,460	32,179	22,876	18,427	23,009	23,735
3,749	6,708	6,569	7,018	19,974	20,444	20,170	19,594	12,964	11,538	13,905	13,827
2,151	4,131	4,470	4,397	14,276	14,452	14,305	13,883	8,723	7,415	8,732	7,995
2,090	3,362	3,453	4,308	12,986	13,438	12,865	12,973	7,625	6,739	7,950	7,868
2,487	3,884	3,607	4,000	11,913	12,183	11,657	11,253	8,203	7,582	7,290	8,850
4,848	8,500	8,034	8,531	27,874	28,929	27,457	26,903	16,567	15,169	16,731	16,764
2,648	4,922	4,348	4,539	14,390	15,623	14,959	14,592	8,561	7,987	8,994	8,535
7,852	12,098	12,528	11,333	38,085	39,502	38,645	37,717	27,361	24,214	28,979	25,578
5,321	8,414	8,166	8,449	25,492	27,025	26,348	25,663	16,176	14,990	17,172	16,099
3,499	5,087	4,553	4,512	16,460	18,200	17,527	17,121	9,570	8,978	10,775	9,862
2,966	4,080	3,893	4,605	15,119	15,960	15,200	14,363	9,071	8,477	10,084	9,877
6,845	11,059	12,308	11,641	34,942	33,539	32,460	32,179	22,876	18,427	23,009	23,735
731	1,367	1,543	1,345	4,231	4,236	4,348	4,027	2,648	2,326	2,697	2,598
1,158	1,902	1,718	2,239	5,758	6,039	5,911	5,858	3,589	3,275	4,118	3,893
580	1,247	1,193	1,203	3,425	3,512	3,527	3,397	2,306	2,080	2,511	2,698
979	1,586	1,577	1,650	4,883	4,816	4,654	4,647	3,264	2,883	3,508	3,552
301	606	538	581	1,677	1,841	1,730	1,665	1,157	974	1,071	1,086
789	1,413	1,696	1,411	5,537	5,448	5,623	5,355	2,891	2,472	3,547	2,940
227	481	444	463	1,411	1,458	1,431	1,401	967	825	949	932
161	333	336	373	1,157	1,118	1,090	1,020	744	584	650	671
174	346	408	387	1,175	1,140	1,122	1,106	847	682	654	716
357	813	798	753	2,436	2,548	2,381	2,436	1,426	1,235	1,296	1,221
50	89	85	105	288	317	309	301	216	192	198	185
178	326	353	356	1,052	1,133	1,103	1,040	786	701	741	630
215	330	350	549	1,220	1,290	1,246	1,224	846	724	697	700
1,104	1,896	2,101	2,174	7,553	7587	7,380	7,579	4,044	3,457	4,757	4,330
409	656	583	891	2,283	2,550	2,326	2,370	1,449	1,328	1,358	1,653
577	810	769	1,243	3,150	3,301	3,159	3,024	2,132	1,954	1,835	1,885

tricts which extend into two or more Ancient or Geographical Counties, are included entirely in that Registration County in which the principal town. Union Counties, therefore, differ, more or less, from the boundaries of Ancient Counties.

e Census of 1891 and the special Census for London taken on 29th March 1896 has been constant; the estimate for the rest of the country is calculated e Census-enumerations in 1881 and 1891 was maintained up to the middle of 1899.

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MARRIAGES, BIRTHS, and DEATHS registered in the Registration

The numbers of Births and Deaths in this Table are obtained from the Quarterly Returns furnished t
presented to Parliament in the 62

REGISTRATION COUNTIES—*continued.*	POPULATION.		MARRIAGES.		BIRTHS.	DEATHS.	BIRTHS.		DEATHS.	
	ENUMERATED on 6th April 1891.*	ESTIMATED to the middle of 1899.†	Number.	Persons Married.			Males.	Females.	Males.	Females
V. SOUTH WESTERN.										
18 WILTSHIRE	254,125	259,513	1,915	3,830	6,725	4,267	3,441	3,284	2,182	2,08
19 DORSETSHIRE	191,177	191,472	1,319	2,638	4,807	3,144	2,511	2,296	1,561	1,58
20 DEVONSHIRE	635,576	657,155	5,245	10,490	16,294	11,562	8,360	7,934	5,754	5,80
21 CORNWALL	318,583	310,716	2,273	4,546	7,794	5,129	3,985	3,809	2,521	2,60
22 SOMERSETSHIRE ..	455,801	462,156	3,226	6,452	11,386	7,823	5,817	5,569	3,837	3,98
VI. WEST MIDLAND.										
23 GLOUCESTERSHIRE ..	601,357	628,111	5,034	10,068	17,309	11,178	8,720	8,589	5,610	5,5
24 HEREFORDSHIRE .	114,404	109,136	759	1,518	2,808	1,881	1,449	1,359	960	9
25 SHROPSHIRE	256,044	244,789	1,779	3,558	6,718	4,366	3,371	3,347	2,310	2,0
26 STAFFORDSHIRE ..	1,108,701	1,189,621	10,472	20,944	41,715	23,289	21,096	20,619	12,105	11,1
27 WORCESTERSHIRE ..	422,673	456,005	3,860	7,720	14,027	7,674	7,167	6,860	3,939	3,7
28 WARWICKSHIRE ..	802,662	861,617	8,009	16,018	28,586	16,843	14,503	14,083	8,774	8,0
VII. NORTH MIDLAND.										
29 LEICESTERSHIRE ..	378,619	426,914	3,490	6,980	12,854	7,298	6,476	6,378	3,779	3,5
30 RUTLANDSHIRE	21,971	21,319	127	254	489	302	236	253	149	1
31 LINCOLNSHIRE	467,327	468,563	3,987	7,974	13,334	7,943	6,718	6,616	4,102	3,8
32 NOTTINGHAMSHIRE ..	505,311	565,201	4,968	9,936	18,224	10,613	9,310	8,914	5,452	5,1
33 DERBYSHIRE	435,266	472,100	3,885	7,770	14,663	7,921	7,553	7,110	4,038	3,8
VIII. NORTH WESTERN										
34 CHESHIRE	704,455	778,684	5,957	11,914	22,004	13,893	11,178	10,826	7,099	6,7
35 LANCASHIRE	3,960,294	4,374,441	37,854	75,708	131,945	92,239	66,918	65,027	47,322	44,5
IX. YORKSHIRE.										
36 WEST RIDING	2,454,655	2,695,612	23,572	47,144	79,837	49,704	40,588	39,249	25,939	23,
37 EAST RIDING (*with York*)	399,975	432,087	3,730	7,460	13,670	7,851	7,021	6,649	4,180	3,
38 NORTH RIDING	357,558	369,973	3,048	6,096	11,021	6,882	5,679	5,342	3,629	3,
X. NORTHERN.										
39 DURHAM	1,024,372	1,160,588	10,101	20,202	40,991	22,530	20,879	20,112	11,794	10,
40 NORTHUMBERLAND ..	506,030	571,978	5,112	10,224	19,123	11,474	9,737	9,386	6,036	5,
41 CUMBERLAND	266,549	279,104	1,978	3,956	7,660	4,307	3,880	3,780	2,213	2
42 WESTMORLAND ..	66,215	67,506	460	920	1,534	874	772	762	459	
XI. WELSH.										
43 MONMOUTHSHIRE ..	275,882	312,866	2,504	5,008	9,924	5,872	4,925	4,999	3,056	2
44 SOUTH WALES	1,049,433	1,207,877	9,726	19,452	38,071	23,084	19,626	18,445	11,921	11
45 NORTH WALES	449,495	440,112	3,314	6,628	12,647	8,553	6,502	6,145	4,333	4

* *See* page 2, note (†). † *See* page 2, note (‡).

General Register Office, Somerset House,
17th March 1900.

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Counties of England, in the Year 1899—*continued.*

the **Local Registrars**, and will probably be found to differ slightly from the revised figures, to be hereafter **Annual Report of the Registrar-General.**

MARRIAGES.				BIRTHS.				DEATHS.		
Registered in the Quarter ending the last Day of				Registered in the Quarter ending the last Day of				Registered in the Quarter end the last Day of		
March.	June.	Sept.	Dec.	March.	June.	Sept.	Dec.	March.	June.	Sept
331	523	490	571	1,721	1,785	1,629	1,590	1,120	1,060	919
222	393	327	377	1,278	1,191	1,183	1,155	814	697	738
991	1,440	1,380	1,434	4,062	4,184	4,135	3,913	2,955	2,644	2,757
451	540	578	704	1,927	1,976	1,960	1,931	1,397	1,252	1,181
492	988	832	914	2,925	3,047	2,750	2,664	1,917	1,929	1,695
832	1,421	1,403	1,378	4,500	4,408	4,190	4,211	2,831	2,491	2,615
111	261	180	207	737	710	709	652	512	440	388
295	561	440	483	1,606	1,797	1,717	1,598	1,249	1,110	907
1,736	2,938	2,726	3,072	10,323	10,797	10,353	10,242	5,947	5,466	6,157
596	1,045	1,097	1,122	3,529	3,709	3,434	3,355	1,974	1,742	1,943
1,278	2,274	2,188	2,269	7,179	7,508	7,054	6,845	4,054	3,920	4,721
495	1,030	978	987	3,126	3,445	3,179	3,104	1,744	1,680	1,925
15	36	39	37	110	121	134	124	84	76	69
649	1,313	967	1,058	3,273	3,385	3,327	3,349	2,069	1,826	2,047
808	1,436	1,333	1,391	4,365	4,808	4,585	4,466	2,616	2,534	2,895
681	1,107	1,031	1,066	3,516	3,864	3,734	3,549	2,048	1,871	2,058
1,086	1,685	1,591	1,595	5,339	5,802	5,469	5,394	3,653	3,361	3,626
6,766	10,413	10,937	9,738	32,746	33,700	33,176	32,323	23,708	20,853	25,353
4,056	6,612	6,513	6,391	19,579	20,576	20,056	19,626	12,664	11,594	13,134
713	955	887	1,175	3,292	3,532	3,446	3,400	1,787	1,779	2,210
552	847	766	883	2,621	2,917	2,846	2,637	1,725	1,617	1,828
2,052	2,928	2,558	2,563	9,677	10,753	10,410	10,151	5,339	5,052	6,377
938	1,509	1,379	1,286	4,579	4,945	4,831	4,768	2,845	2,601	3,203
412	507	515	544	1,861	2,096	1,884	1,819	1,156	1,079	1,000
97	143	101	119	343	406	402	383	230	246	195
512	673	636	683	2,586	2,572	2,396	2,370	1,377	1,160	1,62
2,801	2,492	2,484	2,949	9,556	9,947	9,505	9,063	5,365	5,100	6,47
653	915	773	973	2,977	3,441	3,299	2,930	2,329	2,217	1,98

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GENERAL REPORT AND STATISTICS

For 1898.

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EDITED BY

C. LE NEVE FOSTER, D.Sc., F.R.S.,

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MINES AND QUARRIES:

GENERAL REPORT AND STATISTICS

For 1898.

PART IV.—COLONIAL AND FOREIGN STATISTICS.

STATISTICS RELATING TO PERSONS EMPLOYED, OUTPUT, AND ACCIDENTS AT MINES AND QUARRIES IN THE BRITISH COLONIES AND IN FOREIGN COUNTRIES.

EDITED BY

C. LE NEVE FOSTER, D.Sc., F.R.S.,

ONE OF HER MAJESTY'S INSPECTORS OF MINES.

Presented to both Houses of Parliament by Command of Her Majesty.

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MINES AND QUARRIES:

GENERAL REPORT AND STATISTICS

For 1898.

PART IV.—COLONIAL AND FOREIGN STATISTICS.

INTRODUCTION.

The object of this volume is to present a general picture of the mineral industries of the world, for the purpose of instituting a comparison between the number of persons employed in mining at home and abroad, the quantity of minerals raised, and the accidents happening to the workpeople. Owing to the incompleteness of the data obtainable, the tables afford only an approximation to the truth; however, in spite of this, the statistics which have been collected do afford some idea of the extent of the mineral industries of the world, and at all events form a basis for more exact particulars in future years.

According to Table 275, some 1,800,000 persons are employed in mining and quarrying in the British Empire, of whom nearly one-half are working in the United Kingdom. Foreign countries employ altogether at least 2½ million persons.

The table of output (No. 276) was very properly criticized last year, because it stated the quantity of ore and not the quantity of metal obtainable. A country with a small output of rich ore might therefore figure as less important than a neighbour, whose output was larger in quantity, though less valuable in tons of metal. An attempt has been made to remedy this defect, but until each country supplies us with proper data, estimates must be made, and the tables cannot be completely satisfactory.

It is pleasing to notice the desire among the Mines Inspectors in some British Possessions to keep up a statistical connection with the United Kingdom. The adoption of one uniform system of mineral statistics throughout the British Empire, or indeed throughout the world, would render the task of the compiler very much easier and the general comparison very much more valuable.

The British Empire produced 220 million metric tons of coal, of which only 15 million were raised in the Colonies; and it is interesting to note that the increase in the output of the United Kingdom last year (1899)* was more than equal to the total production of the Colonies in 1898.

Many of our Colonies are large producers of gold, and the British Empire contributed about one-third of the world's output in 1898.

* 223·6 million metric tons. *Mines and Quarries General Report and Statistics for* 1899 (Advance proof) p. 5.

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In the case of iron, it must be remembered that the quantity, approaching 5 million tons, mentioned in the table, represents the amount of metal derived from British ores and not the total make of pig-iron in the country.

Salt is an important product in England and several of our Colonies, and between them they yielded more than one-quarter of the world's supply.

Although the proportion of silver furnished by the British Empire is only one-ninth of the general total, it is pleasing to note that New South Wales, with its wonderful mines at Broken Hill, is now approaching Bolivia and the German Empire in productiveness.

The British Empire produces seven-elevenths of the total tin supply of the world ; in fact the Federated Malay States alone yield more than one-half.

As regards safety, the collieries of the United Kingdom occupy a high place compared with those of the rest of the world.

It may be well to sound a note of warning to British mine-owners and point out that the parasitic disease known as ankylostomiasis is attracting the special attention of several foreign governments, owing to the ravages which it is committing among colliers. Discussions upon the subject have taken place in the Belgian Chamber of Deputies, and official pamphlets* have been recently published by the Ministry of Industry and Labour concerning the measures to be taken to stamp out the pest.

The French Coal Association has thought it advisable to issue to its members two lengthy circulars,† which are full of important information on the subject.

The Italian Government has appointed a special Commission to enquire into the disease and the best methods of putting a stop to it‡ among the Sicilian sulphur miners.

From enquiries I have made among my colleagues, it appears that the disease is not known among British colliers ; but as it has made itself a home in coal mines in Northern Europe, it might be introduced into this country by foreign workmen.

Some explanation is necessary concerning the belated appearance of this Fourth Part of the General Report. I regret to say that the delay has been caused by the illness of Mr. Jordan, the Clerk of Mineral Statistics, who has been absent from work for six months. The charge of the Mineral Statistics Branch has fallen upon his assistant, Mr. Ware, who, even by working early and late, has found it quite impossible to devote full attention to this particular Blue Book, while carrying on the general duties of the office.

C. LE NEVE FOSTER.

HOME OFFICE, WHITEHALL,
15th February, 1900.

---

* "Prophylaxie de l'ankylostomasie." *Service de Santé Hygiène publique et Voirie Communale. Ministère de l'Agriculture et des Travaux Publics.* Brussels, 25th May 1899.—"Mesures à prendre contre l'ankylostomasie." *Commission pour la révision des règlements de police sur les Mines. Séance spéciale.* Brussels, 20th July 1899.

† "Circulaire No. 1690, Belgique," and "Circulaire No. 1759, Belgique." *Comité Central des Houillères de France.* Paris, 10th June 1899, and 4th September 1899.

‡ *Rivista del Serrizio minerario nel 1898.* Rome, 1899, p. 64.

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SUMMARIES.

PERSONS EMPLOYED—OUTPUT—ACCIDENTS,

1897-1898.

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TABLE No. 275.

SUMMARY of the number of PERSONS EMPLOYED at MINES, QUARRIES, and other MINERAL WORKINGS in the BRITISH EMPIRE and in FOREIGN COUNTRIES during the YEARS 1897 and 1898.

Country.	1897.	1898.
GREAT BRITAIN AND IRELAND	**852,083**	**875,603**
BRITISH COLONIES, DEPENDENCIES, AND POSSESSIONS :—		
Bahamas	435	425
Barbados	100‡‡	100
Bechuanaland Protectorate	*	*
British Central Africa Protectorate	*	*
British Guiana	6,550	6,590
British New Guinea	325	325**
British North Borneo	*	*
Canada (*a*)...	13,890	19,538
Cape Colony	14,318	17,065
Ceylon	310,210	310,210**
Channel Islands	1,200	1,200
Cyprus	*	*
Federated Malay States	127,930	125,580
Gold Coast...	2,913‡‡	2,913
India	310,888‡‡	310,888
Leeward Islands (Redonda)	140	140
Malta	*	*
Natal (including Zululand)	1,560	2,723
Newfoundland	*	*
New South Wales	41,208	40,830
New Zealand	16,110	15,675
Queensland	14,887	13,413
Rhodesia	*	*
South Australia	5,533‡‡	5,533
Tasmania	5,530	6,180
Trinidad	*	*
Turks and Caicos Islands	*	*
Victoria	33,804	31,734
Western Australia	17,903	13,066
TOTAL for the BRITISH EMPIRE	1,777,517	1,799,731
FOREIGN COUNTRIES :—		
Austria-Hungary	209,030	219,227†
Bosnia and Herzegovina	1,494	1,472
Belgium	154,917	160,150
Chili	16,727‡	16,727**‡
Corea	1,200‡‡	1,200§
Denmark	—	—
Greenland	104	118
France	286,347	292,821
Algeria	2,795	2,649
New Caledonia	4,347	5,090
German Empire	471,907	498,569
Greece	*	*
Holland	3,118	3,269
Dutch East Indies	23,261	22,095
Italy	89,105	94,858
Japan	118,517‖	118,517‖
Luxemburg	5,662	5,648
Mexico	98,852	98,852**
Norway	2,434	2,434**
Peru	105,000‡‡	105,000
Portugal	8,162	8,560
Roumania	*	*
Russia	239,434‖	239,434‖
Servia	1,433‖	1,433‖
Siam	22,000	22,000
South African Republic	85,790	100,098
Spain	65,995	75,283
Sweden	12,681	13,527
Switzerland	1,864	1,864**
United States	443,130(*b*)	444,578(*c*)
TOTAL for FOREIGN COUNTRIES	2,475,306	2,555,473
TOTAL for the WORLD	**4,252,823**	**4,355,204**

* Information not available. † Including Ozokerite Mines and Petroleum Wells for 1897.
‡ Persons employed in Saltpetre Works only. § Employed at certain Gold Mines only.
‖ Figures for 1896. ** Figures for 1897. ‡‡ Figures for 1898.
(*a*) For British Columbia, Nova Scotia, Ontario, and Quebec only.
(*b*) Coal Miners only, and Ore Miners of Colorado, Houghton Co. (Michigan), and Montana.
(*c*) Coal Miners only, and Ore Miners of Colorado, Marquette Co. (Michigan), and Montana.

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Table No. 276.

Summary of Output of Certain Minerals and Metals in the British Empire and in Foreign Countries during the Year 1898.

Country.	Coal.	Copper.	Fine Gold.	Iron.	Lead.	Petroleum.	Salt.	Fine Silver.	Tin.	Zinc.
	Metric Tons.	Metric Tons.	Kilos.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Kilos.	Metric Tons.	Metric Tons.
...I BRITAIN AND IRELAND..	205,297,006	651	10	4,928,347	25,762	6	1,908,813	6,575	4,722	8,712
...SH COLONIES, DEPENDENCIES, AND POSSESSIONS :—										
...hamas..	—	—	—	—	—	—	1,536	—	—	—
...rbados	—	—	—	—	—	—	—	—	—	—
...chuanaland Protectorate ..	—	—	—	—	—	—	—	—	—	—
...itish Central Africa Protectorate	—	—	—	—	—	—	—	—	—	—
...itish Guiana	—	—	2,976	—	—	—	—	—	—	—
...itish New Guinea	—	—	188	—	—	—	—	—	—	—
...itish North Borneo†	35,400	—	—	—	—	—	—	—	—	—
...nada....	3,795,572	8,148	22,076	27,848	14,477	95,851	51,839	134,385	—	—
...pe Colony	174,050	7,108*	4	—	—	—	12,040	—	—	—
...ylon	—	—	—	—	—	—	32,423	—	—	—
...annel Islands	—	—	—	—	—	—	—	—	—	—
...prus	—	10*	—	—	—	—	1	—	—	—
...derated Malay States	—	—	609	—	—	—	—	—	40,664	—
...ld Coast	—	—	467	—	—	—	—	—	—	—
...dia	4,203,199	—	12,826	17,600*†	—	76,834†	937,932†	—	57*†	—
...eward Islands (Redonda) ..	—	—	—	—	—	—	—	—	—	—
...alta	—	—	—	—	—	—	—	—	—	—
...atal (including Zululand) ..	394,034	—	1	—	—	—	—	—	—	—
...ewfoundland	—	2,420*	—	57,120*	—	—	—	—	—	—
...ew South Wales	4,781,775	5,390	9,111	—	1,746	—	—	397,892	818	2,473
...ew Zealand	921,589	1	7,913	—	—	—	—	9,140	—	—
...ueensland	414,480	40	20,240	—	252	—	5	3,235	680*	—
...hodesia..	—	—	18,065	—	—	—	—	—	—	—
...outh Australia	—	4,570	696	—	321	—	31,447	380*	3*	10*
...asmania	44,849	6,157	2,427	912*	13,280*	—	—	98,305*	2,038	—
...inidad	—	—	—	—	—	—	—	—	—	—
...rks and Caicos Islands	—	—	—	—	—	—	70,973	—	—	—
...ictoria	249,672	—	24,522	—	12*	—	—	62*	56*	—
...estern Australia	—	120	29,220	—	3*	—	126	—	40	—
TOTAL FOR BRITISH EMPIRE..	220,301,426	34,610	151,371	5,031,827	55,853	172,691	3,047,135	647,954	49,058	11,195
...EIGN COUNTRIES :—										
...gentine Republic	—	—	207	—	—	—	—	11,930	—	—
...stria-Hungary	37,786,963	1,194	2,839	1,427,240	12,645	277,675‡	520,608	59,104	48	7,302
...Bosnia and Herzegovina	271,183	148	—	15,336	—	—	12,708	—	—	2*
...lgium	22,068,335	—	—	17,975*	102*	—	—	—	—	4,245*
...livia	—	350*	39	—	1,458*	—	—	465,529§	4,615*	—
...azil	15,173†	—	3,356	—	—	—	24,394†	—	—	—
...lgaria	67,540‖	—	—	—	—	—	—	—	—	—
...ili	282,663	23,554*	2,000*	—	—	—	—	140,500*	6*	—
...ina	—	—	3,324†	—	—	—	—	—	—	—
...lombia	—	—	4,514†	—	—	—	—	52,511†	—	—
...ta	—	—	4,393	—	—	—	—	—	—	—
...ba	—	—	—	250,000*¶	—	—	—	—	—	—
...uador	—	—	200†	—	—	—	—	240†	—	—
...ance	32,356,104	12*	—	1,679,900*	16,339*	—	999,283	18,586*	—	40,208*
...Algeria	200	—	—	284,140*	45*	—	21,302	134*	—	3,600*
...French Guiana	—	—	1,871	—	—	—	—	—	—	—
...New Caledonia	—	530*	—	—	—	—	—	—	—	—
...ang King	244,800	—	—	—	—	—	—	—	—	—
...rman Empire	127,928,490	30,695	2,847	3,795,946*	132,742	25,789	1,370,341	480,578	10*	154,867	
...ece	—	—	—	247,160*	5,094*	—	20,000	20,876*	—	13,008*
...land	150,398	—	—	—	—	—	—	—	—	—
...Dutch East Indies	169,734	—	177	—	—	185,405	—	—	17,957	—
...Dutch Guiana	—	—	723	—	—	—	—	—	—	—
...Dutch West Indies.. ..	—	—	—	—	—	—	2,026*	—	—	—
...le-China	247,100	—	—	—	—	—	—	—	—	—
...ly	341,327	4,808*	156	119,312*	13,672*	2,015	481,171	14,604*	—	52,840*
...an	5,847,751	20,770	862	57,718	1,737	34,365	—	57,208	1,737	—
...xemburg	—	—	—	1,926,622*	—	—	—	—	—	—
...xico	126,261	10,000*	12,942*	10*	65,004	—	1,862	1,023,647	—	30*
...aragua	—	—	979	—	—	—	—	—	—	—
...rway†	—	3,492*	1	1,940*	—	—	—	5,372	—	329*
...ru	10,000	3,500	1,900	—	9	9,000	18,000	165,000	2	—
...rtugal	22,541	3,174*	6	1,485*	2,042*	—	—	119	71*	—
...umania	67,000	—	—	—	—	180,000	108,079	—	—	—
...ssia†	11,207,475	6,567	38,129	1,868,564	261¶	7,855,582	1,526,822	7,819¶	—	5,879
...rvia¶	87,066	113	—	—	462	—	—	—	—	—
...ain	—	—	75*	—	—	—	—	—	4,000	—
...uth African Republic	1,988,424	—	119,136	—	55*	—	—	12*	17	—
...ain	2,500,654	57,694*	3	3,958,376*	277,283	—	479,372	229,000**	2	39,934*
...eden	236,277	816*	53*	1,427,807*	2,360*	—	—	2,033	—	25,250
...itzerland¶	2,000	—	—	3,600*	—	—	47,292	—	—	—
...key	—	—	—	—	1,425*	—	7,300	—	—	7,617*
...key	176,000*	1,020†	—	—	—	—	203,128§	—	—	—
...ited States	199,567,797	238,822	96,993	11,962,877	201,395	7,029,109	2,236,810	1,693,212	—	104,688
...guay	—	—	60	—	—	—	—	—	—	—
...ezuela	—	—	817	—	—	—	234,740	—	—	—
...AL FOR FOREIGN COUNTRIES..	443,554,446	407,259	297,702	29,044,406	734,130	15,598,940	8,306,038	5,048,014	28,465	459,799
...AL for the WORLD ..	663,855,872	441,869	449,073	34,076,233	789,983	15,771,631	11,353,173	5,695,968	77,523	470,994

* Estimated.
† Figures for 1897.
‡ Figures for Austria for 1897.
§ Converted into fine silver on the total value of exported ingots, ore, and sulphide.
‖ Figures for 1894.
¶ Figures for 1896.
** Rothwell, *Mineral Industry for 1898.*

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TABLE No. 277.

SUMMARY of ACCIDENTS at MINES, QUARRIES, and other MINERAL WORKINGS in the

COUNTRY.	DEATHS FROM ACCIDENTS.											
	1897						1898.					
	Coal Mines.	Gold Mines.	Other Mines.	All Mines.	Quarries.	All Mines and Quarries.	Coal Mines.	Gold Mines.	Other Mines.	All Mines.	Quarries.	All Mines and Quarries.
GREAT BRITAIN AND IRELAND ..	901	—	78	979	123	1,102	887	—	54	941	134	1,075
BRITISH COLONIES, DEPENDENCIES, AND POSSESSIONS :—												
Bahamas	—	—	—	—	—	—	—	—	—	—	—	—
Barbados	—	—	—	—	—	—	—	—	—	—	—	—
Bechuanaland Protectorate	—	—	—	—	—	—	—	—	—	—	—	—
British Central Africa Protectorate	—	—	—	—	—	—	—	—	—	—	—	—
British Guiana	—	7	—	7	—	7	—	2	—	2	1	3
British New Guinea	—	—	—	—	—	—	—	—	—	—	—	—
British North Borneo	—	—	—	—	—	—	—	—	—	—	—	—
Canada :—												
British Columbia	6	—	—	—	—	—	7	—	—	—	—	—
Nova Scotia	7	1	—	—	—	—	13	4	—	—	—	—
Ontario	—	1	—	1	—	1	—	2	3	5	—	5
Cape Colony	—	—	34*	—	—	—	11	—	52*	—	—	—
Ceylon	—	—	—	12	2	14	—	—	—	—	—	—
Channel Islands	—	—	—	—	—	—	—	—	—	—	—	—
Cyprus	—	—	—	—	—	—	—	—	—	—	—	—
Federated Malay States	—	—	—	29†	—	—	—	—	—	30‡	—	—
Gold Coast	—	—	—	—	—	—	—	1	—	—	—	—
India	67	105	2	—	—	—	43	60	3	—	—	—
Leeward Islands (Redonda)	—	—	—	—	—	—	—	—	—	—	—	—
Malta	—	—	—	—	—	—	—	—	—	—	—	—
Natal (including Zululand)	7	—	—	—	—	—	9	—	—	—	—	—
Newfoundland	—	—	—	—	—	—	—	—	—	—	—	—
New South Wales	16	15	20	51	—	—	25	10	25	60	—	—
New Zealand	4	19	—	—	—	—	1	21	—	—	—	—
Queensland	2	16	—	18	—	—	—	19	—	19	—	—
Rhodesia	—	—	—	—	—	—	..	—	—	—	—	—
South Australia	—	—	—	—	—	—	—	2	—	—	—	—
Tasmania	—	—	—	13	—	—	—	—	—	18	—	—
Trinidad	—	—	—	—	—	—	—	—	—	—	—	—
Turks and Caicos Islands	—	—	—	—	—	—	—	—	—	..	—	—
Victoria	3	37	—	40	—	—	—	44	—	44	—	—
Western Australia	—	27	—	—	—	—	—	31	—	—	—	—
TOTAL FOR BRITISH EMPIRE ..	1,013	228	—	—	—	—	996	196	—	—	—	—
FOREIGN COUNTRIES :—												
Austria-Hungary :—												
Austria§	149	—	28	177	—	—	—	—	—	—	—	—
Hungary	—	—	—	81	—	—	—	—	—	88	—	—
Bosnia and Herzegovina	—	—	—	—	—	—	—	—	—	3	—	—
Belgium	124	—	2	126	3	—	172	—	—	172	9	—
Bolivia	—	—	—	—	—	—	—	—	—	—	—	—
Brazil	—	—	—	—	—	—	—	—	—	—	—	—
Bulgaria	—	—	—	—	—	—	—	—	—	—	—	—
Chili	—	—	—	—	—	—	—	—	—	—	—	—
France	153	—	27	180	149	329	159	—	37	196	146	342
Algeria	—	—	—	2	8	10	—	—	—	1	1	2
New Caledonia	—	—	—	—	—	—	—	—	—	—	—	—
German Empire	836	—	116	952	9	961	1,150	—	91	1,241	12	1,253
Greece	—	—	—	—	—	—	—	—	—	—	—	—
Holland	—	—	—	—	1	1	—	—	—	—	—	—
Italy	—	—	—	123	25	148	—	—	—	82	29	111
Japan	—	—	—	15	—	—	—	—	—	67	—	—
Mexico§	—	—	—	136	—	—	—	—	—	—	—	—
Norway	—	—	—	—	—	—	—	—	—	—	—	—
Peru	—	—	—	—	—	—	—	—	—	—	—	—
Portugal	—	—	—	—	—	—	—	—	—	1	—	—
Roumania	—	—	—	—	—	—	—	—	—	—	—	—
Russia§	—	—	—	—	—	—	—	—	—	—	—	—
Servia§	—	—	—	—	—	—	—	—	—	—	—	—
South African Republic	30	339	—	—	—	—	27	404	—	—	—	—
Spain	—	—	—	142	—	—	—	—	—	214	—	—
Sweden	—	—	—	—	—	12	—	—	—	—	—	14
Switzerland§	—	—	—	2	7	9	—	—	—	—	—	—
United States	896¶	—	—	—	—	—	981¶	—	—	—	—	—
TOTAL FOR FOREIGN COUNTRIES.	2,188	339	—	—	—	—	2,489	404	—	—	—	—
TOTAL for the WORLD ..	**3,201**	**567**	—	—	—	—	**3,485**	**600**				

* Kimberley Diamond Mines only.
† Excluding Selangor.
‡ Excluding Selangor and Pahang.
§ Information for 1898 not available

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TABLE No. 277.

BRITISH EMPIRE and in FOREIGN COUNTRIES during the Years 1897 and 1898.

DEATH-RATES PER 1,000 PERSONS EMPLOYED.												COUNTRY.
1897						1898.						
Coal Mines.	Gold Mines.	Other Mines.	All Mines.	Quarries.	All Mines and Quarries.	Coal Mines.	Gold Mines.	Other Mines.	All Mines.	Quarries.	All Mines and Quarries.	
1·32	—	1·65	1·34	1·00	1·29	1·28	—	1·14	1·27	1·00	1·23	GREAT BRITAIN AND IRELAND.
												BRITISH COLONIES, DEPENDENCIES, AND POSSESSIONS:—
—	—	—	—	—	—	—	—	—	—	—	—	Bahamas.
—	—	—	—	—	—	—	—	—	—	—	—	Barbados.
—	—	—	—	—	—	—	—	—	—	—	—	Bechuanaland Protectorate.
—	—	—	—	—	—	—	—	—	—	—	—	British Central Africa Protectorate.
—	1·08	—	1·08	—	1·07	—	·31	—	—	11·11	·46	British Guiana.
—	—	—	—	—	—	—	—	—	—	—	—	British New Guinea.
—	—	—	—	—	—	—	—	—	—	—	—	British North Borneo.
												Canada:—
2·49	—	—	—	—	—	2·46	—	—	—	—	—	British Columbia.
1·35	1·40	—	—	—	—	2·83	6·49	—	—	—	—	Nova Scotia.
—	2·33	—	·43	—	·43	—	3·45	·43	·67	—	·67	Ontario.
—	—	3·26*	—	—	—	3·69	—	4·23*	—	—	—	Cape Colony.
—	—	—	·49	0·1	·05	—	—	—	—	—	—	Ceylon.
—	—	—	—	—	—	—	—	—	—	—	—	Channel Islands.
—	—	—	—	—	—	—	—	—	—	—	—	Cyprus.
—	—	—	·42†	—	—	—	—	—	·46‡	—	—	Federated Malay States.
—	—	—	—	—	—	—	·34	—	—	—	—	Gold Coast.
·28**	4·44**	·06**	—	—	—	·18**	2·54	·09	—	—	—	India.
—	—	—	—	—	—	—	—	—	—	—	—	Leeward Islands (Redonda).
—	—	—	—	—	—	—	—	—	—	—	—	Malta.
4·48	—	—	—	—	—	3·30	—	—	—	—	—	Natal (including Zululand).
—	—	—	—	—	—	—	—	—	—	—	—	Newfoundland.
1·60	·70	2·01	1·24	—	—	2·38	·86	2·40	1·47	—	—	New South Wales.
2·09	1·34	—	—	—	—	·50	1·54	—	—	—	—	New Zealand.
1·70	1·17	—	1·21	—	—	—	1·57	—	1·42	—	—	Queensland.
—	—	—	—	—	—	—	—	—	—	—	—	Rhodesia.
—	—	—	—	—	—	—	1·30	—	—	—	—	South Australia.
—	—	—	2·35	—	—	—	—	—	2·91	—	—	Tasmania.
—	—	—	—	—	—	—	—	—	—	—	—	Trinidad.
—	—	—	—	—	—	—	—	—	—	—	—	Turks and Caicos Islands.
3·30	1·13	—	1·18	—	—	—	1·43	—	1·39	—	—	Victoria.
—	1·51	—	—	—	—	—	2·37	—	—	—	—	Western Australia.
1·07	1·75	—	—	—	—	1·04	1·09	—	—	—	—	TOTAL FOR BRITISH EMPIRE.
												FOREIGN COUNTRIES:—
												Austria-Hungary:—
1·40	—	1·04	—	—	—	—	—	—	—	—	—	Austria.§
—	—	—	1·26	—	—	—	—	—	1·26	—	—	Hungary.
—	—	—	—	—	—	—	—	—	2·29	—	—	Bosnia and Herzegovina.
1·03	—	1·03	1·03	—	—	1·40	—	—	1·38	—	—	Belgium.
—	—	—	—	—	—	—	—	—	—	—	—	Bolivia.
—	—	—	—	—	—	—	—	—	—	—	—	Brazil.
—	—	—	—	—	—	—	—	—	—	—	—	Bulgaria.
—	—	—	—	—	—	—	—	—	—	—	—	Chili.
1·07	—	2·06	1·15	1·13	1·15	1·07	—	2·75	1·21	1·12	1·17	France.
—	—	—	1·05	2·32	1·87	—	—	—	·56	·29	·77	Algeria.
—	—	—	—	—	—	—	—	—	—	—	—	New Caledonia.
2·25	—	1·20	2·06	1·33	2·05	2·87	—	1·00	2·52	1·76	2·53	German Empire.
—	—	—	—	—	—	—	—	—	—	—	—	Greece.
—	—	—	—	2·07	1·62	—	—	—	—	—	—	Holland.
—	—	—	2·30	·70	1·74	—	—	—	1·42	·90	1,17	Italy.
—	—	—	‖	—	—	—	—	—	‖	—	—	Japan.
—	—	—	1·37	—	—	—	—	—	—	—	—	Mexico.§
—	—	—	—	—	—	—	—	—	—	—	—	Norway.
—	—	—	—	—	—	—	—	—	—	—	—	Peru.
—	—	—	—	—	—	—	—	—	·26	—	—	Portugal.
—	—	—	—	—	—	—	—	—	—	—	—	Roumania.
—	—	—	—	—	—	—	—	—	—	—	—	Russia.§
—	—	—	—	—	—	—	—	—	—	—	—	Servia.§
4·21	4·31	—	—	—	—	3·70	4·35	—	—	—	—	South African Republic.
—	—	—	2·15	—	—	—	—	—	2·84	—	—	Spain.
—	—	—	—	—	·05	—	—	—	—	—	1·03	Sweden.
—	—	—	4·36	4·93	4·83	—	—	—	—	—	—	Switzerland.§
2·10*	—	—	—	—	—	2·61¶	—	—	—	—	—	United States.
2·06	4·31	—	—	—	—	2·23	4·25	—	—	—	—	TOTAL FOR FOREIGN COUNTRIES.
1·58	2·71	—	—	—	—	1·63	2·87	—	—	—	—	**TOTAL for the WORLD.**

‖ Cannot be calculated as number of persons employed not known.
* The figures relate to 17 of the principal coal-producing states.
** *See* note, p. 309.
‡ Underground quarries only.

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BRITISH EMPIRE.

GREAT BRITAIN AND IRELAND.

WITH THE

ISLE OF MAN.

The following Tables summarize the results of Parts II. and III. of the General Report :—

TABLE 278.

PERSONS EMPLOYED at all the MINES for the Years 1897 and 1898.

Year.	Total Number of Mines at Work.	Below-ground.			Above-ground.			Total Below and Above Ground.
		Males.	Females.	Total.	Males.	Females.	Total.	
1897	4,007	578,226	None	578,226	145,413	5,074	150,487	728,713
1898	4,002	587,297	None	587,297	148,702	5,126	153,828	741,125
Increase or decrease ...	—5	+9,071	—	+9,071	+3,289	+52	+3,341	+12,412

TABLE 279.

PERSONS EMPLOYED at QUARRIES more than 20 feet deep during the Years 1897 and 1898.

Year.	Total Number of Quarries at Work.	INSIDE THE QUARRIES, *i.e.*, inside the actual pits, holes, or excavations.			OUTSIDE THE QUARRIES, *i.e.*, outside the actual pits, holes, or excavations.			Total Number of Persons Employed Inside and Outside the Quarries.
		Males.	Females.	Total Inside.	Males.	Females.	Total Outside.	
1897	6,922	58,837	8	58,845	63,063	1,462	64,525	123,370
1898	6,948	62,745	7	62,752	70,221	1,505	71,726	134,478

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GREAT BRITAIN AND IRELAND, WITH THE ISLE OF MAN—*continued.*

TABLE 280.

QUANTITY and VALUE of MINERALS produced from MINES, QUARRIES, and other WORKINGS.*

Mineral.	1897. Quantity.		1897. Value at the Mines and Quarries.	1898. Quantity.		1898. Value at the Mines and Quarries.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Alum clay (Bauxite)	13,327	*13,541*	2,823	12,402	*12,601*	2,898
Alum shale	611	*621*	76	13,617	*13,836*	1,702
Arsenic	4,165	*4,232*	74,795	4,174	*4,241*	53,787
Arsenical pyrites	13,137	*13,348*	10,734	11,144	*11,323*	8,144
Barytes	22,723	*23,088*	24,117	22,225	*22,582*	23,253
Bog ore	7,124	*7,238*	1,781	5,418	*5,505*	1,354
Chalk	3,858,448	*3,920,367*	163,595	4,298,014	*4,366,987*	180,651
Chert and Flint	93,710	*95,214*	16,495	82,057	*83,374*	14,513
Clay	12,705,196	*12,909,084*	1,453,128	14,738,474	*14,970,391*	1,616,358
Coal	202,129,931	*205,373,631*	59,740,009	202,054,516	*205,297,006*	64,169,382
Copper ore	7,132	*7,246*	18,706	9,001	** 9,145*	25,849
Copper precipitate	220	*223*	2,320	130	*132*	1,300
Fluor spar	297	*302*	397	56	*57*	49
Gold ore	4,517	*4,589*	6,282	703	*714*	1,158
Granite and Syenite	1,847,323	*1,876,968*	552,604	1,875,817	*1,905,919*	576,457
Gravel and Sand	1,356,787	*1,378,560*	111,332	1,625,690	*1,651,778*	135,538
Gypsum	181,385	*184,296*	66,978	196,028	*199,174*	71,316
Igneous Rocks (other than Granite)	2,355,554	*2,393,355*	441,391	2,602,491	*2,644,255*	465,543
Iron ore	13,787,878	*14,000,140*	3,217,795	14,176,938	*14,404,444*	3,406,628
Iron pyrites	10,583	*10,753*	4,525	12,108	*12,302*	4,864
Jet	lbs. 84	*kilos. 31*	8	—	—	—
Lead ore	35,338	*35,905*	275,409	32,985	*33,514*	267,402
Limestone (other than Chalk)	11,003,524	*11,180,104*	1,155,993	11,980,578	*12,172,837*	1,256,154
Manganese ore	599	*609*	351	231	*235*	200
Mica	4,983	*5,063*	1,727	907	*921*	454
Nickel ore	300	*305*	300	—	—	—
Ochre, Umber, &c.	14,422	*14,653*	12,997	19,827	*20,145*	13,003
Oil shale	2,228,745	*2,259,431*	555,936	2,137,993	*2,172,303*	534,498
Petroleum	12	*12*	29	6	*6*	14
Phosphate of lime	2,000	*2,032*	3,500	1,550	*1,575*	2,713
Salt	1,903,493	*1,934,039*	620,898	1,878,665	*1,908,813*	620,115
Sandstone	4,964,561	*5,044,230*	1,525,039	5,242,115	*5,326,238*	1,632,786
Slates	609,194	*618,970*	1,649,576	668,859	*679,592*	1,900,228
Soapstone	28	*28*	98	—	—	—
Strontium sulphate	14,987	*15,227*	4,310	12,941	*13,149*	3,674
Tin ore (dressed)	7,120	*7,234*	254,218	7,380	*7,498*	288,325
Uranium ore	30	*30*	1,367	26	*26*	1,185
Wolfram	125	*127*	2,008	326	*331*	15,844
Zinc ore	19,278	*19,587*	69,154	23,552	*23 930*	117 784
Total values	—	—	72,042,801	—	—	77,415,063

* This table does not include the produce of quarries less than 20 feet deep except in the case of iron ore, ochre, phosphate of lime, strontium sulphate and tin ore.

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GREAT BRITAIN AND IRELAND, WITH THE ISLE OF MAN—*continued.*

TABLE 281.

SUMMARY of the METALS obtainable by SMELTING from the ORES in the preceding TABLE.

Metal.	1897. Quantity.		1897. Value at the Average Market Price.	1898. Quantity.		1898. Value at the Average Market Price.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Aluminium	310	*315*	45,880	310	*315*	45,880
Copper	518	*526*	27,096	640	*651*	35,523
Gold	ozs. 2,032	*kilos. 63*	7,185	ozs. 395	*kilos. 13*	1,299
Iron	4,736,667	*4,812,679*	11,394,779	4,850,508	*4,928,347*	12,740,043
Lead	26,562	*26,988*	332,578	25,355	*25,762*	332,995
Nickel	7½	7½	1,050	—	—	—
Silver	ozs. 249,156	*kilos. 7,750*	28,614	ozs. 211,403	*kilos. 6,575*	23,728
Sodium	85	*86*	12,750	85	*86*	12,750
Tin	4,453	*4,524*	291,336	4,648	*4,722*	345,812
Zinc	7,049	*7,162*	126,823	8,574	*8,712*	179,482
Total values	—	—	12,268,091	—	—	13,717,512

TABLE 282.

FATAL ACCIDENTS and DEATHS at all the MINES for the Years 1897 and 1898.

Year.	Number of Separate Fatal Accidents.			Number of Deaths from Accidents.			Death-rate from Accidents.		
	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.	Per 1,000 Persons employed Below-ground.	Per 1,000 Persons employed Above-ground.	Per 1,000 Persons employed Above and Below Ground.
1897	794	103	897	875	104	979	1·51	·69	1·34
1898	730	129	859	806	135	941	1·37	·88	1·27
Increase or decrease ...	— 64	+ 26	— 38	— 69	+ 31	— 38	— ·14	+ ·19	— ·7

TABLE 283.

DEATHS from ACCIDENTS at QUARRIES* during the Years 1897 and 1898.

Year.	Number of Separate Fatal Accidents.			Number of Deaths from Accidents.			Death-rate per 1,000 Persons employed.		
	Inside the Quarries.	Outside the Quarries.	Total.	Inside the Quarries.	Outside the Quarries.	Total.	Inside the Quarries.	Outside the Quarries.	Total.
1897	89	29	118	93	30	123	1·58	·46	1·00
1898	97	34	131	100	34	134	1·59	·47	1·00
Increase or decrease ...	+ 8	+ 5	+ 13	+ 7	+ 4	+ 11	+ ·01	+ ·01	—

* More than 20 feet deep.

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BRITISH COLONIES AND DEPENDENCIES.

Bahamas.*

Bay salt is produced in the Bahamas by the solar evaporation of sea water. During the years 1897 and 1898 the number of persons employed was 435 and 425 respectively. The principal producers are the islands of Inagua, Rumcay, and Exuma.

The output which has considerably fallen off in 1898 was as follows:—

TABLE 284.

Year.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£
1897	3,109	3,159	1,501
1898	1,512	1,536	800

Barbados.†

The most important mineral product of the island is "manjak," a variety of glance pitch occurring in veins which traverse deposits of infusorial earth. The largest mine employs more than a hundred hands. The mineral is sold on the island at prices varying from 3*l.* 10*s.* to 7*l.* 10*s.* a ton; the superior qualities are used for making varnish, and the less valuable kinds for insulating purposes. The quantity exported in 1897 was 1880 tons.

Petroleum has been discovered, and the value of the deposits is now being tested by bore-holes.

Bechuanaland Protectorate.‡

Little is known about the mineral wealth of this country; though a small seam of good coal has been discovered close to the railway in the Northern Protectorate.

British Columbia. (*See under* CANADA.)

British Central Africa Protectorate.§

Coal is being worked on a small scale on the Upper Zambesi.

A considerable amount of prospecting for gold is going on in the Central Angoniland District.

* Official Return furnished by the Colonial Secretary, Nassau.—Bell "Bahamas Annual Report for 1897." *Colonial Reports*—Annual, No. 238.—London, 1898 [C. 9046-6], p. 11.—*Blue Books for Bahamas for 1897 and 1898.*

† Williams "Barbados Annual Report for 1897." *Colonial Reports*—Annual, No. 231.—London, 1898 [C. 8650-29], pp. 12 and 22.

‡ Newton "Bechuanaland Protectorate Annual Reports for 1896-7." *Colonial Reports*—Annual, No. 226.—London, 1898 [C. 8650-24], p. 8.

§ Commissioner Sharpe "Trade and General Condition of British Central Africa Protectorate for the Years 1898-99."—*Dipl. and Cons. Reports*, No. 2327, Ann. Ser., 1899 [C. 9044-153], p. 14.—Acting Vice-Consul Hillier "Trade of Chinde for the Year 1898."—*Dipl. and Cons. Reports*, No. 2328, Ann. Ser., 1899 [C. 9044-154] p. 3.

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British Guiana.*

Like the adjoining part of Venezuela, the British Colony is gold-bearing in many places; the gold is obtained mainly from alluvial deposits, though much rich auriferous quartz exists. There has been little vein-mining up to the present time. The gold industry shows a falling off of more than 8,000 ozs. during the year 1898–1899.

TABLE 285.

PERSONS EMPLOYED at MINES, ALLUVIAL WORKINGS, and QUARRIES during the Years 1897–8 and 1898–9.

Kind of Workings.	1897–8.	1898–9.
Mines and Alluvial or Placer diggings	6,500	6,500
Granite Quarries...	50	90

TABLE 286.

QUANTITY and VALUE of the MINERALS produced in 1897–8 and 1898–9.

Mineral.	Financial Year 1897–8.			Financial Year 1898–9.		
	Quantity.		Value.	Quantity.		Value.
Gold	Ozs. 121,490	*Kilos.* 3,779	£ 443,366	Ozs. 113,114	*Kilos.* 3,517	£ 406,503
Granite...	Statute Tons. 3,110	*Metric Tons.* 3,159	1,944	Statute Tons. 6,459	*Metric Tons.* 6,562	4,036
Total value	—	—	445,310	—	—	410,539

The table below shows the output of the principal districts.

TABLE 287.

Gold obtained.

District.	Financial Year 1897–8.	Financial Year 1898–9.
	Ozs.	Ozs.†
Barima	20,309	
Cuyuni	26,569	
Essequebo	23,091	
Potaro	33,288	
Other districts	18,233	
Total output in ozs. ...	121,490	113,114
„ „ kil. ...	3,779	3,517

* Official Return furnished by the Department of Mines, Georgetown.
† Details not available.

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BRITISH GUIANA—*continued.*

TABLE 288.

DEATHS from ACCIDENTS at MINES and QUARRIES during the Years 1897–8 and 1898–9.

Kind of Workings.	1897–8.		1898–9.	
	Persons Killed.	Death-rate per 1,000 Persons employed.	Persons Killed.	Death-rate per 1,000 Persons employed.
Gold mines	1	1·08	1	·31
Alluvial or Placer diggings ...	6		1	
Granite Quarries	—	—	1	11·11

British New Guinea.*

Prospecting in New Guinea is no easy task, owing not only to physical difficulties, but also to attacks from the natives; consequently there is no reason for surprise that the mining industry makes slow progress. The number of ounces of gold exported in 1897–8 was, in fact, somewhat less than in the previous year, but the value slightly greater. The gold is obtained solely from alluvial deposits.

TABLE 289.

Year.	Gold produced.		Value.
	Ozs.	*Kil.*	£
1896–97	7,148	*222*	25,018
1897–98	6,830	*213*	25,612

British Borneo.

BRUNEI.†

The only mines worked are at Muara, which exports about 14,000 tons of coal annually.

LABUAN.

Coal is worked in the island of Labuan, and its harbour is now an important coaling station.

The output‡ of coal in 1897 was as follows:—

TABLE 290.

Year.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£
1897	34,841	*35,400*	18,536
1898	—	—	—

The coal is stated to be very suitable for steamships, and it is used for tin-smelting at Singapore.

* *Annual Report on British New Guinea for 1897-98*, Brisbane. 1899, and Lt.-Gov. Sir W. Macgregor "British New Guinea Annual Reports for 1897–8," *Colonial Reports*—Annual, No. 258.—London, 1899. [C. 9046-26].

† Consul Keyser "Trade of Borneo and Sarawak for the Year 1898."—*Dipl. and Cons. Reports*, No. 2322, Ann. Ser. 1899 [C. 9044-147], p. 5.

‡ *Blue Book for Labuan for 1897.* Figures for 1898 not yet available.

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BRITISH BORNEO—*continued.*

NORTH BORNEO.*

The existence of coal, copper, gold, and other minerals has been proved ; gold is the only one which is being worked at the present time. It is being obtained by a steam dredger from the bed of the Segama River.

SARAWAK.†

The known mineral resources of Sarawak are deposits of antimony ore, coal, diamonds, gold, and petroleum.

Antimony.—The Borneo Company has extensive works at Busoh in Upper Sarawak.

Coal.—The Government works mines at Sadong and Brooketon. The former produces about 40,000 tons a year, and the latter 12,000 tons.

Diamonds.—The gems are found in very small quantities.

Gold.—Gold is being extracted from quartz by the cyanide process ; and Chinamen earn a living by working alluvial deposits in Upper Sarawak.

British Solomon Islands.‡

Copper ore has been found in the Protectorate.

Brunei. (*See* BRITISH BORNEO.)

Canada.

Asbestos.—The Canadian asbestos, which mineralogically is chrysotile, occurs in small veins in serpentine in the eastern townships of the province of Quebec.

Chromic Iron Ore.§—This ore is obtained from irregular pockets in the serpentine of the province of Quebec.

Coal.—The coalfields, which have been most largely developed, are situated on the seaboards of the Atlantic and Pacific Oceans, and are therefore of no small importance from an Imperial point of view. On the Atlantic side of the continent bituminous coal is being mined from thick seams of true Carboniferous age at the Sydney (Cape Breton), Pictou, and Springhill coalfields, in Nova Scotia. The coal of the Pacific coast, which, on the other hand, is of Cretaceous age, is derived from collieries at Nanaimo, Wellington, and Comox, in Vancouver Island. Coal likewise occurs in Queen Charlotte Islands.

In the interior of the Dominion no coal is found between the Atlantic seaboard and the prairies of the West, where great quantities of lignite exist. At Lethbridge the seams are worked on a large scale. On approaching the Rocky Mountains, the seams occurring near Cochrane improve in quality, and yield bituminous coal. Further west, again, is the Cascade coalfield, in the vicinity of Banff, one of the well-known pleasure resorts of the Rocky Mountains, where the coal has become converted into semi-anthracite and anthracite.

Thick seams of good bituminous coal have long been known to exist in the vicinity of the Crow's Nest Pass, and this store of valuable fuel is now rendered available for industrial purposes by a branch line by the Canadian Pacific Railway Company. All these coals are of Cretaceous age.

Copper.—Copper ore is mined in the provinces of British Columbia, Ontario, and Quebec. In the first of these provinces copper pyrites occurs in connexion with pyrrhotite and gold, especially at the rising town of Rossland, whose mines are already supplying large and important smelting works.

In Ontario copper pyrites accompanies the nickeliferous pyrrhotite, which has made the Sudbury district so famous ; large quantities of regulus containing copper and nickel are produced at the Sudbury smelting works and sent to the east for the extraction of the two metals.

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* *The Colonial Office List for 1899*, p. 316.

† *Ibid.* p. 319 and Consul Keyser "Trade of Borneo and Sarawak for the Year 1898."—*Dipl. and Cons. Reports*, No. 2322, Ann. Ser. 1899 [C. 9044-147], p. 9.

‡ Woodford "British Solomon Islands Annual Report for 1897-8," *Colonial Reports*—Annual, No. 251.—London, 1898 [C. 9046-19].

§ Obalski, *Chromic iron in the Province of Quebec.*—Department of Colonization and Mines, January, 1898.

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CANADA—*continued.*

In the province of Quebec there are veins of cupreous iron pyrites containing a little silver, and they furnish an ore which is utilised in the manufacture of sulphuric acid before the valuable metal is abstracted.

Gold.—At the present time the chief gold-producing provinces of the Dominion are British Columbia, the Yukon region of the North-West Territories, Nova Scotia, and Ontario.

The alluvial deposits which made the Cariboo district so famous about the year 1859 are very far from being exhausted, and are being worked by the hydraulic and other methods. Dredging the beds of rivers is being attempted in several places. The auriferous copper ores of the Rossland district are largely swelling Canada's output of the precious metal. Workable deposits of gold are by no means confined to the two districts of British Columbia just named; in fact, the metal is found in greater or less quantities in very many parts of this immense, but thinly inhabited and imperfectly explored, province.

At the present moment all gold-producing districts sink into insignificance when one reads of the productiveness of the diggings in the far north-west of the Dominion at the head waters of the Yukon River and its tributaries, such as the Klondike.

The gold of Nova Scotia is derived from free-milling quartz veins, and it is encouraging to note that the production of the province is increasing.

Ontario is not yet producing a large quantity of gold, though the labours of prospectors have proved the existence of auriferous veins over a considerable extent of country from the extreme west of the province in the vicinity of the Lake of the Woods, through Rainy Lake, Seine River, Manitou Lake, Wahnapitae Lake, to the Marmora district in the east. The output from various stamp mills affords good grounds for believing that gold mining will become an important industry in Ontario.

Granite and Miscellaneous Building Stones.—Building stones, such as granite, limestones, marble, and sandstone abound in the Dominion, and it is only the lack of a sufficient market which prevents their being worked on a larger scale.

Graphite.—This mineral is obtained in the provinces of New Brunswick, Ontario, and Quebec from crystalline limestone in the Laurentian rocks.

Gypsum.—New Brunswick and Nova Scotia are remarkable for thick beds of gypsum, some of which occurs in the form of spotlessly white alabaster. Ontario, likewise, produces gypsum.

Iron Ore.—Though endowed with large supplies of iron ore in many of its provinces, the Dominion of Canada is as yet a small producer, for its total output is considerably less than one-hundredth that of the United States.

Lead Ore.—The mineral resources of British Columbia are by no means confined to gold. This province is a large producer of argentiferous lead ore, and the new discoveries of the Kootenay district render it probable that the output will go on increasing.

Mercury.—The only cinnabar mine in the Dominion was opened a short time ago on Kamloops Lake in British Columbia, near the Canadian Pacific Railway.

Mica.—This mineral is beginning to be mined more extensively in various places. The "white mica" (muscovite) occurs in granite and felspar veins, whilst the "amber mica" (phlogopite) is associated with apatite in pyroxenic rocks.

Natural Gas.—The Lower Silurian rocks, when buried, yield areas containing natural gas in a few places, such as at Port Colborne and Kingsville, in Southern Ontario.

Nickel.—Canada can boast that it possesses rich and important deposits of nickel in the Sudbury district, where the metal occurs in pyrrhotite, more or less mixed with copper pyrites. The present supply could be very largely increased.

Petroleum.—The principal petroleum district at the present time is in Southern Ontario, and the value of the output forms an important item in the statistics of the Colony.

Phosphate of Lime.—This mineral has been extensively worked from deposits in the Laurentian rocks, especially in the province of Quebec, north of Buckingham, and also to a less extent in the province of Ontario, north of Kingston. Owing to the competition of phosphates from Florida, prices have dropped, and working the Canadian apatite is no longer so profitable as it was.

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CANADA—*continued.*

Salt.—Thick beds of salt occur in Southern Ontario, in the Onondago division of the Silurian rocks. The brine is pumped up and evaporated.

Silver.—The lead ores of British Columbia are often highly argentiferous, and to the increased yield of the Kootenay district must be ascribed the notable rise in the production of silver in the Dominion.

The rich silver ores in the Thunder Bay district of the province of Ontario are not being largely worked at the present time.

Slate.—A small amount of slate is obtained from the Cambrian rocks, in the province of Quebec.

TABLE 291.

QUANTITY and VALUE of MINERALS produced in the DOMINION of CANADA during the Years 1897 and 1898.*

Mineral or other product.	1897.† Quantity.		1897.† Market Value, less Charges of Transport from Place of Production.	1898.‡ Quantity.		1898.‡ Market Value, less Charges of Transport from Place of Production.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Actinolite	205	*208*	379	—	—	—
Asbestos	30,442	*30,932*	91,513	21,237	*21,578*	99,910
Baryta	571	*580*	629	955	*970*	1,080
Coal	3,786,107	*3,846,865*	1,500,739	3,725,585	*3,785,372*	1,690,676
Coke	60,686	*61,660*	36,258	64,682	*65,720*	45,041
Copper (fine, contained in ore).	5,938	*6,033*	308,560	8,014	*8,143*	443,744
Felspar	1,400	*1,422*	676	2,232	*2,268*	1,284
Fireclay	2,118	*2,152*	1,183	1,937	*1,968*	1,027
Flagstones	—	—	1,477	—	—	873
Gold (Fine)	ozs. 291,582	*kil. 9.069*	1,238,428	ozs. 709,776§	*kil. 22,076*	3,015,069
Granite	10,345	*10,511*	12,726	—	—	15,118
Graphite	436	*443*	3,337	—	—	2,280
Gravel and Sand ...	152,963	*155,418*	15,766	—	—	—
Grindstones	4,572	*4,645*	8,699	—	—	8,109
Gypsum...	239,691	*243,538*	50,246	195,764	*198,906*	47,350
Iron ore...	50,705	*51,519*	26,772	51,929	*52,762*	31,338
,, chromic ...	2,637	*2,679*	6,673	1,804	*1,833*	4,982
Lead	17,419	*17,699*	287,025	14,248	*14,477*	247,890
Limestone for flux in smelting iron ore.	31,273	*31,775*	6,217	30,280	*30,766*	6,401
Manganese ore... ...	15	*15*	240	45	*46*	329
Mercury	lbs. 688	*kilos. 256*	67	—	—	—
Mineral water	galls. 749,691	*litres 3,406,190*	29,071	—	—	31,849
Mica	—	—	15,616	—	—	24,164
Natural gas	—	—	66,960	—	—	65,753
Nickel	1,785	*1,814*	287,502	2,463	*2,503*	374,145
Ochres	3,905	*3,968*	4,841	2,089	*2,123*	3,821
Petroleum	galls. 24,844,995	*litres 112,882,191*	207,852	galls. 24,527,650	*litres 111,440,348*	201,597
Phosphate of lime ...	908	*923*	819	654	*665*	753
Platinum	—	—	329	—	—	—
Pyrites (Copper and Iron).	38,910	*39,534*	23,986	28,766	*29,228*	26,481
Salt	51,348	*52,172*	46,383	51,020	*51,839*	51,090
Sand (moulding) ...	5,485	*5,573*	2,246	9,439	*9,590*	4,323
Silver (Fine)	ozs. 5,558,446	*kilos. 172,885*	682,889	ozs. 4,320,575	*kilos.* 134,385	530,815
Slate	—	—	8,794	—	—	8,382
Soapstone	157	*160*	72	—	—	—
Tripolite	15	*15*	32	908	*922*	3,423
Building materials :—						
Bricks	—	—		—	—	
Building stone ...	—	—		—	—	
Cement, natural ...	—	—		—	—	
,, Portland ...	—	—		—	—	
Lime	—	—	862,962	—	—	917,857
Pottery	—	—		—	—	
Sewer pipe	—	—		—	—	
Terra cotta	—	—		—	—	
Tiles	—	—		—	—	
Total value ...	—	—	5,837,964	—	—	7,906,954

* Reports of the Division of Mineral Statistics and Mines of Canada for the years 1897 and 1898.
† Revised figures.
‡ Preliminary Return, subject to revision.
§ Estimated on the value of 1 oz. of gold being worth £4 4*s.* 11½*d.*

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CANADA—*continued.*

The general improvement which took place in 1898 is best described in the words of the Geological Survey department* :—

"It will be observed that most of the large increase in the total is to be credited to the "metals gold, copper, nickel ; the non-metallic materials, coal, asbestos, and cement also "contributing. Beginning with the most important, the increases in these products "were as follows, viz. :—Gold, about $7,673,000 (£1,576,644) ; coal, over $924,000 "(£189,863) ; copper, nearly $658,000 (£135,205) ; nickel, nearly $422,000 (£86,712) ; "asbestos, iron, and cement aggregating about $185,000 (£38,014).

"Of the gold output the main feature was the very large increase in that of the Yukon. "This accounts for $7,500,000 (£1,541,096) of the enlargement, which is three times as "great an estimated output as that for last year. With the exception of the gold washings "of the Saskatchewan river in the North-west Territories, there were also increases in all "the other districts of the Dominion.

"There were increased outputs of coal in all the different districts. In copper, the "largest increase was in Ontario, which amounted to over 50 per cent. of the previous "year's output. British Columbia also showed a considerable enlargement, whilst in "Quebec a small falling off was apparent. A rise in the price of the metal makes the "proportional increase in value greater than that for quantity.

"In nickel, the increase in the quantity is greater than that in the value, owing to a fall "in the average price of the metal for the year.

"The falling away in the production of both lead and silver is, in the former case, "partly offset by the rise in the average price, whilst in the latter case, a lower price for "the year has aggravated the proportional decrease in the value as compared with the "quantity.

"Whilst there was a decrease in the actual quantity of the product of the asbestos "mines of Quebec, the value shows a large percentage increase, which is explained by the "lesser proportion of asbestic and low grade fibre in the output."

The Statistical Year book of Canada for 1897† contains a brief *resumé* of those parts of the mining laws of the Dominion and of the several provinces, which deal with the acquisition of mineral claims.

The "Placer Mining Act, 1891" of British Columbia has been amended in 1898 and 1899.

Regulations governing placer mining and river dredging in the provisional district of the Yukon have been issued by the Government.‡ The official pamphlet contains useful diagrams, explaining how the various kinds of claims are to be staked out.

The mining industries of some of the provinces of the Dominion are sufficiently important to deserve separate notices.

BRITISH COLUMBIA.§

At the present time the principal mining regions of British Columbia are the Kootenay, Cariboo, Omenica, and Cassiar ; though their wealth depends largely upon gold, other valuable minerals are known to occur, and it is impossible to say what may not still be found in a country so thinly populated and so imperfectly prospected.

In the Kootenay region there are the important gold mines of Rossland, and the silver lead mines of Slocan ; whilst the valuable seams of coal near the Crow's Nest Pass have now been opened up by the Canadian Pacific Railway.

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* *Summary of the Mineral Production of Canada for 1898*, published by the Geological Survey of Canada, pp. 6 and 7.
† Issued by the Department of Agriculture, Ottawa, 1898.
‡ Ottawa, 1898.
§ *Annual Reports of the Minister of Mines for British Columbia for 1897 and 1898.* Victoria.

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CANADA.—BRITISH COLUMBIA—*continued.*

The rich alluvial gold beds of Cariboo attracted diggers forty years ago, and are now affording large quantities of the precious metal to companies employing hydraulic mining. Omenica and Cassiar, lying to the north, form a link between Cariboo and its latest and now best-known rival Klondike.

TABLE 292.

PERSONS EMPLOYED at COAL MINES during the Years 1897 and 1898.

1897.			1898.		
Under-ground.	Above-ground.	Total.	Under-ground.	Above-ground.	Total.
—	—	2,413	2,029	812	**2,841**

TABLE 293.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Coal	882,854	*897,022*	544,225	1,135,865	*1,154,093*	700,190
Coke	17,832	*18,118*	18,320	35,000	*35,562*	35,959
Copper	2,377	*2,415*	54,701	3,246	*3,298*	179,750
Gold, Alluvial...	ozs. 25,676	*kilos. 798*	105,517	ozs. 32,167	*kilos. 1,001*	132,194
" from quartz veins, &c.	ozs. 106,141	*kilos. 3,301*	436,195	ozs. 110,061	*kilos. 3,423*	452,305
Lead	17,340	*17,618*	285,728	14,149	*14,376*	221,421
Silver	ozs. 5,472,971	*kilos. 170,228*	672,502	ozs. 4,292,401	*kilos. 133,509*	488,187
Other minerals	—	—	31,151	—	—	31,130
Total value	—	—	2,148,339	—	—	**2,241,136**

TABLE 294.

DEATHS from ACCIDENTS at COAL MINES during the Years 1897 and 1898.

Cause of Accident.	No. of Persons Killed.	
	1897.	1898.
Underground:		
Falls of coal	1	3
" rock	2	1
Explosion of gas	—	2
Crushed by car	3	1
Surface:		
Railways	—	—
Total	6	7

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CANADA.—BRITISH COLUMBIA—*continued.*

TABLE 295.

DEATH-RATE from ACCIDENTS at COAL MINES during the Years 1897 and 1898.

1897.			1898.		
Death-rate per 1,000 Persons Employed.			Death-rate per 1,000 Persons Employed.		
Under-ground.	Above-ground.	Total.	Under-ground.	Above-ground.	Total
—	—	2·49	3·45	—	**2·46**

During the latter six months of the year 1898 six persons were killed at metalliferous mines, but as no complete statistics of persons employed at these mines are given, the death-rate cannot be calculated.

The Coal Mines Regulation Act of this Province contains a section prohibiting the employment of Chinamen underground, as it is considered by some persons that such employment would be a source of danger to the lives of the other workmen. The question of the legality of the enactment has lately been brought before the Judicial Committee of the Privy Council, who have decided* that the Provincial Legislature acted *ultra vires* in framing such a section; consequently Chinamen may be employed below-ground in the coal mines.

NOVA SCOTIA.†

TABLE 296.

PERSONS EMPLOYED at COAL MINES during the Years ended 30th September 1897 and 1898.

Year.	Under-ground.			Above-ground.			Construction.			Total.
	Men.	Boys.	Total.	Men.	Boys.	Total.	Men.	Boys.	Total.	
1897	3,320	506	3,826	1,121	180	1,301	47	1	48	5,175
1898	2,850	464	3,314	1,011	166	1,177	93	3	96	**4,587**

The average numbers of persons employed at gold mines during the years ending 30th September 1897 and 1898 were 715 and 616 respectively.

TABLE 297.

QUANTITY of MINERALS produced during the Years ending 30th September 1897 and 1898.

Mineral.	Year ending 30th September 1897.		Year ending 30th September 1898	
	Quantity.		Quantity.	
	Statute Tons.	*Metric Tons.*	Statute Tons.	*Metric Tons.*
Coal	2,320,916	*2,358,161*	2,281,454	*2,318,066*
Coke	45,000	*45,722*	42,000	*42,674*
Gold	ozs. 26,964	*kilos. 838*	ozs. 31,104	*kilos. 967*
Gypsum (exported)	125,000	*127,006*	131,000	*133,102*
Iron ore	44,146	*44,854*	31,050	*31,548*
Limestone	25,000	*25,402*	24,000	*24,385*
Manganese ore	100	*102*	75	*76*

* *The Times*, 29th July, 1899, p. 3.

† *Reports of the Department of Mines for Nova Scotia*, 1897 and 1898, Halifax

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CANADA.—NOVA SCOTIA—*continued.*

TABLE 298.

DEATHS from ACCIDENTS at MINES during the Years ending 30th September 1897 and 1898.

Year.	Kind of Mines.	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.
1897 ...	Coal	7	1·35
	Gold	1	1·40
1898 ...	Coal	13	2·83
	Gold	4	6·49

ONTARIO.*

TABLE 299.

PERSONS EMPLOYED at MINES and MINERAL WORKINGS during the Years 1897 and 1898.

Kind of Working.	1897.	1898.
Copper and nickel	535	637
Gold	430	580
Iron ore	130	100
Silver	—	59
Other workings	1,207	6,119
Total	2,302	7,495

TABLE 300.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.

Mineral or other Product.	1897. Quantity.	1897. Quantity.	1897. Value.	1898. Quantity.	1898. Quantity.	1898. Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Calcium carbide ...	513	*521*	7,077	929	*944*	11,502
Copper	2,455	*2,494*	41,110	3,738	*3,798*	55,085
Gold...	ozs. 11,412	*kilos. 355*	39,091	ozs. 16,261	*kilos. 505*	56,523
Graphite	357	*363*	1,747	268	*272*	1,233
Gypsum	1,544	*1,569*	3,688	2,679	*2,722*	822
Iron ore	21,438†	*21,782*	59,104	24,472	*24,865*	10,043
Mica	—	—	—	30	*30*	1,541
Natural gas	—	—	63,380	—	—	61,973
Nickel	1,785	*1,814*	73,901	2,039	*2,072*	105,662
Petroleum (crude)... ...	galls. 25,556,591	*litres 116,115,298*	219,273	galls. 26,978,977	*litres 122,577,549*	230,712
Salt	48,827	*49,611*	51,345	53,022	*53,873*	57,305
Silver	—	—	—	ozs. 86,600	*kilos. 2,694*	10,677
Building materials :—						
Bricks, tiles, pipes, &c.	—	—	44,897	—	—	254,660
Building stone, &c. ...	—	—	—	—	—	154,110
Cement, Portland ...	barrels 96,825	—	34,994	barrels 153,348	—	62,075
,, rock	,, 84,670	—	15,642	,, 91,528	—	15,251
Lime	—	—	—	bushels 2,620,000	*decalitres 9,523,086*	63,287
Total value ...	—	—	655,349	—	—	1,152,461

* *Reports of the Bureau of Mines for Ontario for* 1897 *and* 1898, Toronto.
† Pig iron made at blast furnaces. The quantity of Ontario iron ore used is not stated in the Report.

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CANADA.—ONTARIO—*continued.*

TABLE 301.

NUMBER of DEATHS from ACCIDENTS at MINES during the Years 1897 and 1898.

Kind of Mine.	Number of Persons Killed.		Death-rate per 1,000 Persons Employed.	
	1897.	1898.	1897.	1898.
Copper	—	2	—	3·14
Gold	1	2	2·33	3·45
Silver	—	1	—	16·95

QUEBEC.*

This Province employs about 4,000 persons in mining and quarrying, of whom one-fifth are engaged in getting asbestos, the most important mineral.

TABLE 302.

OUTPUT and VALUE of MINERALS during the Years 1897 and 1898.

Mineral.	1897.			1898.		
	Statute Tons.	*Metric Tons.*	Value.	Statute Tons.	*Metric Tons.*	Value.
			£			£
Asbestos	22,647	*23,010*	78,082	20,549	*20,879*	105,053
Barytes	—	—	—	49	*50*	57
Chrome iron	2,340	*2,378*	6,734	1,805	*1,834*	5,137
Copper ore	36,835	*37,426*	27,479	35,686	*36,259*	29,565
Felspar	1,116	*1,134*	822	1,786	*1,815*	1,027
Flagstones	957	*972*	1,438	845	*859*	736
Gold	ozs. 50	*kilos. 1*	185	ozs. 370	*kilos. 11*	1,336
Graphite	—	—	—	76	*77*	1,747
Iron ores	19,766	*20,083*	8,470	13,385	*13,600*	7,807
Mica	—	—	10,274	246	*250*	16,644
Ochre	1,107	*1,125*	2,548	1,170	*1,189*	2,692
Phosphate	—	—	—	777	*789*	1,228
Slate	4,650	*4,725*	7,726	3,064	*3,113*	7,680
Zinc and lead ores	430	*437*	1,089	1,300	*1,321*	4,500
Building materials... ..	—	—	156,575	—	—	158,630
Total value	—	—	301,422	—	—	343,839

* Obalski, *Report on the Mines of the Province of Quebec for the year 1898*, Department of Colonization and Mines, March 1899.

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Cape Colony.*

Though the diamond industry overshadows all other kinds of mining in the Colony, the extraction of coal is gradually assuming more importance, whilst copper ore has long been a notable article of export.

Coal.—As shown by Table 304, the total output of coal now reaches more than 170,000 tons a year. Of this amount, Indwe produced more than one-half; the rest came from collieries at Cyphergat, Sterkstroom, Molteno, &c.

Copper Ore.—Namaqualand produces all the copper ore; apparently the copper mines are not under official inspection.

Diamonds.—Exclusive of the river diggings, there are now nine separate diamond mines in the Kimberley district, viz., Bultfontein, De Beers, Du Toit's pan, Kamfersdam, Kimberley, Otto's Kopje, Premier (Wesselton), St. Augustine's, and Theron's. Of these, De Beers is far the most largely worked at the present time, for it employs nearly one-half of the mining population of the district; next comes Kimberley employing about one-fifth of the total. No work was done at Du Toit's pan in 1898, and St. Augustine's was abandoned.

In addition to the Kimberley Mines, there are a few unimportant diamond mines in the Barkly West Division, besides alluvial diggings.

TABLE 303.

PERSONS EMPLOYED† during the Years 1897 and 1898.

Class of Mine.	Under-ground.			Above-ground.			Total for 1898.			Total for 1897.
	White.	Coloured.	Total.	White.	Coloured.	Total.	White.	Coloured.	Total.	
Coal ...	95	2,283	2,378	52	550‡	602	147	2,833	2,980	2,192
Copper Ore...	63	532	595	115	1,092	1,207	178	1,624	1,802	1,709
Diamond ...	425	4,040	4,465	1,565	6,253	7,818	1,990	10,293	12,283§	10,417§

TABLE 304.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Asbestos ... ... (exported)	46	*47*	490	149	*151*	2,087
Coal	113,851	*115,678*	91,001	171,301	*174,050*	135,851
Copper ore	38,977	*39,603*	384,879	36,822	*37,413*	310,636
Crocidolite ... ... (exported)	15	*15*	1,676	8	*8*	700
Diamonds	carats 3,052,640	*kilos. 627*	3,821,771	carats 3,270,917	*kilos. 672*	4,128,321
Fireclay	440	*447*	Not stated.	1,240	*1,260*	Not stated.
Gold	ozs. 76	*kilos 2*	266	ozs. 127	*kilos. 4*	444
Salt, white	bushels 305,139 tons 8,173‖	*8,304*	19,580	bushels 442,380 tons 11,850‖	*12,040*	32,598
Total value	—	—	4,319,663	—	—	4,610,587

* *Statistical Registers* for 1897 and 1898, Cape Town, and *Reports of the Inspector of Mines for Kimberley, &c., for* 1898, Cape Town.
† Exclusive of a few persons employed in getting asbestos and salt.
‡ 284 of these persons were females.
§ These figures relate to Kimberley mines only.
‖ Estimated at 60 lbs. = 1 bushel.

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CAPE COLONY—*continued.*

TABLE 305.

DEATHS from ACCIDENTS during the Year 1898.

Class of Mine.	Number of Deaths.			Death-rate per 1,000 Persons Employed.		
	Under-ground.	Above-ground.	Total.	Under-ground.	Above-ground.	Total.
Coal	8	3	11	3·36	4·98	3·69
Copper ore	—	—	Not stated.	—	—	—
Diamond (Kimberley Mines).	36	16	52	8·06	2·05	4·23
Total for Coal and Diamond Mines.	44	19	63	6·43	2·26	4·13

*Kimberley Diamond Mines.**

TABLE 306.

PERSONS EMPLOYED during the Years 1897 and 1898.

Year.	Under-ground.			Above ground.			Total.		
	White.	Coloured.	Total.	White.	Coloured.	Total.	White.	Coloured.	Total
1897 ...	397	3,539	3,936	1,500	4,981	6,481	1,897	8,520	10,417
1898 ...	425	4,040	4,465	1,565	6,253	7,818	1,990	10,293	12,283

TABLE 307.

DEATHS from ACCIDENTS during the Years 1897 and 1898.

Year.	Place.	Number of Deaths.			Death-rate per 1,000 Persons Employed.		
		White.	Coloured.	Total.	White.	Coloured.	Total.
1897 ...	Under-ground ...	3	21	24	7·56	5·93	6·10
	Above-ground ...	2	8	10	1·33	1·61	1·54
	Total... ...	5	29	34	2·63	3·40	3·26
1898 ...	Under-ground ...	—	36	36	—	8·91	8·06
	Above-ground ...	—	16	16	—	2·56	2·05
	Total... ...	—	52	52	—	5·05	4·23

The death-rate from accidents at Kimberley still continues high; some of the causes which conduce to the great sacrifice of life are set forth in my General Report for 1897 (page 276).

The worst kind of accident is the "mud-rush," *i.e.*, a sudden inrush of mud, which may fill up several hundred yards of level, and bury the workmen or confine them for many hours or even several days. One quarter of the death-roll in 1898 was due to mud-rushes.

* *Reports of the Inspector of Mines for Kimberley, &c., for 1897 and 1898*, Cape Town.

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CAPE COLONY—*continued.*

Kimberley Diamond Mines—continued.

TABLE 308.

CAUSES of ACCIDENTS in 1897.

Cause of Accident.	Number of Separate Accidents.	Number of Persons Killed.			Number of Persons Injured.		
		White.	Coloured.	Total.	White.	Coloured.	Total.
Under-ground.							
Mud-rushes	1	1	1	2	—	—	—
Falls of ground	29	—	11	11	2	19	21
Falling down "passes"	5	—	2	2	—	3	3
Falling down shafts	2	2	1	3	—	—	—
Falls from ladders	2	—	1	1	—	1	1
Whilst ascending or descending shafts by machinery.	1	—	—	—	1	—	1
Ground falling from bucket whilst sinking shafts.	2	—	—	—	—	2	2
On tramways or by trucks ...	10	—	1	1	1	8	9
Blasting	10	—	4	4	4	6	10
Miscellaneous	3	—	—	—	—	3	3
Total	65	3	21	24	8	42	50
Surface and Open Works.							
Falls of ground and débris ...	7	1	2	3	—	8	8
On tramways or by trucks ...	28	—	—	—	—	29	29
Machinery	11	—	3	3	1	7	8
Blasting	3	—	1	1	1	1	2
Miscellaneous	12	1	2	3	4	11	15
Total	61	2	8	10	6	56	62
Totals (above and below ground)	126	5	29	34	14	98	112

TABLE 308—*continued.*

CAUSES of ACCIDENTS in 1898.

Cause of Accident.	Number of Separate Accidents.	Number of Persons Killed.			Number of Persons Injured.		
		White.	Coloured.	Total.	White.	Coloured.	Total.
Under-ground.							
Mud-rushes	4	—	13	13	—	2	2
Falls of ground	60	—	8	8	5	51	56
Falling down "passes"	4	—	3	3	—	1	1
Falls from ladders	11	—	1	1	—	10	10
Whilst ascending or descending shafts by machinery.	3	—	6	6	2	16	18
Machinery in shaft	4	—	1	1	—	3	3
On tramways or by trucks ...	9	—	—	—	—	9	9
Ground and timber falling down shaft.	3	—	1	1	1	1	2
Ground and timber falling down "pass."	2	—	—	—	—	2	2
Blasting	6	—	3	3	—	7	7
Miscellaneous	2	—	—	—	—	2	2
Total	108	—	36	36	8	104	112

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CAPE COLONY—*continued.*

Kimberley Diamond Mines—continued.

Table 308—*continued.*

CAUSES of ACCIDENTS in 1898—*continued.*

Cause of Accident.	Number of Separate Accidents.	Number of Persons Killed.			Number of Persons Injured.		
		White.	Coloured.	Total.	White.	Coloured.	Total.
Surface and Open Works.							
Falls of ground and débris ...	17	—	5	5	—	14	14
On tramways or by trucks ...	61	—	6	6	8	47	55
Falling down open works ...	1	—	—	—	1	—	1
Machinery	7	—	1	1	—	6	6
Collapse of bridge at washing plant.	1	—	2	2	—	1	1
Blasting	4	—	2	2	—	6	6
Miscellaneous	5	—	—	—	2	3	5
Total	96	—	16	16	11	77	88
Totals (above and below ground)	**204**	—	52	**52**	19	181	**200**

In addition to the deaths at Kimberley, the following accidents were reported, during the year 1898, from other workings for diamonds*:—

One white person was killed at Leicester Mine, and one coloured person at Otto's Prospect Mine; both deaths being caused by falls of ground.

As the number of persons employed is not stated, no death-rate can be calculated.

Ceylon.†

Plumbago is the most important mineral produced in Ceylon; it occurs in gneiss and mica schist, and the workings are sometimes carried on to a depth of 150 yards.

The diggings for precious stones, such as rubies, sapphires, spinels, chrysoberyls, garnets, zircons, and moonstones, are not very important.

The salt is obtained from salt lagoons or "pans."

"Cabook" is a local name for laterite, the most useful building stone in the island.

TABLE 309.

PERSONS EMPLOYED at MINES and MINERAL WORKINGS during the Years 1896 and 1897.

Kind of Workings.	Under-ground.			Above-ground.			Total Number of Persons Employed in Mines and Mineral Workings.
	Males.	Females.	Total.	Males.	Females.	Total.	
Mines	9,486	20	9,506	12,938	2,208	15,146	24,652
Mineral Workings	33,371	2,265	35,636	151,232	98,690	249,922	285,558
Total for 1897 ...	42,857	2,285	45,142	164,170	100,898	265,068	**310,210**
Total for previous year.	38,847	2,187	41,034	161,540	86,134	247,674	288,708

* *Report of the Inspector of Mines for Kimberley, &c., for 1898*, Cape Town.
† *Official Return furnished by the Government of Ceylon* and *Blue Books of Ceylon*, Colombo, for 1897 and 1898.

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CEYLON—*continued.*

TABLE 310.

QUANTITY and VALUE of the MINERALS produced during the Years 1897 and 1898.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Granite	cubes 5,063	—	1,920	cubes 157,295	—	86,004
Grinding stones	(*a*) Nr. 228	—	33	pkges. 525	—	52
Mica	(*a*) 8	*8*	1,063	(*a*) 4 (*a*) pkges. 10	*4* —	547
Plumbago	(*a*) 18,971	*19,275*	231,977	77,269	*78,509*	1,901,906
Precious stones and pearls ...	(*a*) pkges. 15	—	731	Nr. 111	—	570
Salt	3,407	*3,462*	9,684	31,911	*32,423*	89,178
Stone for building :— "Cabook"	blks. 1,618,610	—	3,074	blks. 2,149,166	—	3,470
Talc	—	—	—	4	*4*	400
Total value	—	—	248,485	—	—	2,082,127

(*a*) Exported.

TABLE 311.

DEATHS from ACCIDENTS at MINES and MINERAL WORKINGS during the Years 1896 and 1897.

Kind of Workings.	Under-ground.			Above-ground.			Total Below and Above Ground.	Death-rate per 1,000 Persons Employed.		
	Males.	Females.	Total.	Males.	Females.	Total.		Under-ground.	Above-ground.	Under and Above Ground.
Mines ...	11	—	11	1	—	1	12	1·16	·07	·49
Openworks...	—	—	—	1	1	2	2	—	·01	·01
Total for 1897.	11	—	11	2	1	3	14	·24	·01	·05
Total for previous year.	12	—	12	2	—	2	14	·29	·01	·05

Channel Islands.

The average number of persons employed each year in the stone quarrying industry of the Channel Islands is about 1,200.

TABLE 312.

QUANTITY and VALUE of STONE exported during the Years 1897 and 1898.*

Mineral and Islands where obtained.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Guernsey and Jersey : Stone, dressed or rough (exported).	331,128	*336,442*	195,787	346,014	*351,567*	190 796
Total value	—	—	195,787	—	—	190,796

* *Annual Statistics of Trade of the United Kingdom for 1898*, p. 894.

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Cyprus.*

TABLE 313.

QUANTITY and VALUE of the MINERALS produced during the Financial Years 1896-7 and 1897–8.

Minerals.	1896–7.			1897–8.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Copper (exported)	11	*11*	49	19	*19*	483
Gypsum „	3,721	*3,781*	1,683	3,821	*3,882*	1,557
Salt „	1	*1*	3	1	*1*	2
Umber	1,537	*1,562*	777	2,863	*2,909*	960
Total value ...	—	—	2,512	—	—	3,002

In addition to these minerals, sandstone and limestone are quarried for building and other purposes ; but the quantities are unknown.

Federated Malay States.†

The Malay Peninsula is the great tin-producing region of the world at the present day, and the States with the largest output are under British protection. The ore is obtained almost exclusively from alluvial deposits worked as open quarries.

The output of Perak, the great tin-producing State, continues to decline, and in 1898 was 4,230 metric tons less than it was in 1895, when it reached its zenith of 24,249 metric tons. The British Resident‡ ascribed the diminished output to the scanty labour-supply, and not to the exhaustion of the tin resources.

Hydraulic mining has lately been introduced for the purpose of working tin deposits in the Kinta district of Perak and near Seremban in Negri Sembilan.

A certain amount of vein mining is being carried on. At the mines of the Pahang Corporation at Kuantan, Pahang, about 30,000 tons of crude tin ore are being stamped yearly, with a yield of about 960 tons of tin oxide (*black tin*), or 3½ per cent. This yield corresponds very closely with that of Dolcoath mine in Cornwall, which is 3⅓ per cent.

The owners of the Rin Lode in Jelebu (Negri Sembilan) are about to commence to crush.

The total number of coolies employed at the alluvial mines of the four different States, Negri Sembilan, Pahang, Perak, and Selangor. during the year 1898 amounted to 125,580.

TABLE 314.

PERSONS EMPLOYED at MINES during the Years 1897 and 1898.

State.	1897.	1898.
Negri Sembilan	—	10,836
Pahang	—	1,975
Perak	—	54,316
Selangor	—	58,453
Total	127,930	**125,580**

* *Blue Books for Cyprus for 1896–7 and 1897–8.*
† Official Return furnished by the Mines Department, Seremban.
‡ Treacher, *Perak Administration Report for the year 1898*, p. 8.

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FEDERATED MALAY STATES—*continued.*

TABLE 315.

SUMMARY of QUANTITY and VALUE of MINERALS produced in the four States during the Years 1897 and 1898.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Copper ore	25	*25*	(Not stated)	20	*20*	(Not stated)
Gold	ozs. 27,253	*kilos. 847*	92,697	ozs. 23,726	*kilos. 738*	83,175
Tin*	42,410	*43,091*	2,654,866	39,576	*40,211*	2,829,684

TABLE 316.

NEGRI SEMBILAN.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Tin*	2,916	*2,963*	182,544	2,746	*2,790*	196,378

TABLE 317.

PAHANG.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Copper ore	25	*25*	(Not stated)	20	*20*	(Not stated)
Gold	ozs. 26,146	*kilos. 813*	89,549	ozs. 22,526	*kilos. 701*	80,078
Tin*	548	*557*	34,290	631	*641*	45,113

TABLE 318.

PERAK.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Gold	ozs. 1,107	*kilos. 34*	3,148	ozs. 1,200†	*kilos. 37*	3,097
Tin*	20,966	*21,302*	1,312,503	19,703	*20,019*	1,408,770

* Including the metal obtained by smelting on the spot, and the estimated quantity of metal contained in the exported ore smelted at Singapore and elsewhere.

† Output from January to August only.

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FEDERATED MALAY STATES—*continued.*

TABLE 319.

SELANGOR.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Tin*	17,980	*18,269*	1,125,529	16,496	*16,761*	1,179,423

TABLE 320.

DEATHS from ACCIDENTS at MINES during the Years 1897 and 1898.

State.	Number of persons killed.		Death-rate per 1,000 persons employed.	
	1897.	1898.	1897.	1898.
Negri Sembilan	2	5	†	·46
Pahang	1	11‡	·93	†
Perak	26	25	·53	·46
Selangor...	†	†	†	†
Total	29§	41§	·42§	·46‖

Gold Coast.¶

The name of the Colony points to its mineral resources. The principal gold mines are situated in Wassaw and Appolonia in the Western District. The gold deposits now being worked are beds of conglomerate similar in character to those which are yielding such enormous quantities of precious metal in the Transvaal. When the railway from the coast is completed to the mining districts, a much greater development of the mineral wealth of the Gold Coast may be confidently expected.

The ores of silver, mercury, lead, tin, copper, and iron have been found, and quarries of sandstone abound throughout the settlement.

TABLE 321.

PERSONS EMPLOYED at GOLD MINES during the Year 1898.

Under-ground.	Above-ground.			Total.
Males.	Males.	Females.	Total.	
881	1,811	221	2,032	2,913

* Including the metal obtained by smelting on the spot, and the estimated quantity of metal contained in the exported ore smelted at Singapore and elsewhere.
† Not ascertainable.
‡ Including accidents to woodcutters.
§ Excluding Selangor.
‖ " " and Pahang.
¶ Official Return furnished by the Colonial Secretary of Gold Coast Colony, *Blue Books for Gold Coast* for 1897 and 1898.—Smith, "Gold Coast Annual Report for 1897," *Colonial Reports*, Annual, No. 249, London, 1898 [C. 9406–17], p. 13. and No. 271 [C. 9498–5], 1899, p. 12.—Irvine, "The Gold Mines of West Africa," *Jour. Soc. Arts.*, Vol. XLVII., p. 305.

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GOLD COAST—*continued.*

The quantity and value of gold exported in 1897 and in 1898 was as follows :—

TABLE 322.

Metal.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Ozs.	*Kilos.*	£	Ozs.	*Kilos.*	£
Gold	23,555	*732*	84,797	17,733	*552*	63,838

The amount of gold obtained from the mines which furnished the returns of persons employed was 10,458 ozs., worth £41,042.

TABLE 323.

DEATHS from ACCIDENTS at GOLD MINES during the Year 1898.

Under-ground.	Above-ground.	Total.	Death-rate per 1,000 persons employed.		
			Under-ground.	Above-ground.	Total.
1	—	1	1·13	—	·34

India.

Much valuable information concerning mines and other mineral workings is contained in the two annual official publications "Review of Mineral Productions in India for "1897," by Mr. David Hooper, and the "Report of the Inspection of Mines in "India, for the year ending 31st December 1897," by Mr. James Grundy, Inspector of Mines in India.

The three most important minerals worked are :—coal, gold ore, and salt.

Coal.—The total output of coal in 1898 was 4,136,813 tons,* or about 73,686 tons more than that of the previous year. About three-quarters of the coal produced in India comes from Bengal ; the remainder is obtained from the North West Provinces and Oudh, Punjab, Central Provinces, Assam, Burma, Central India, the Nizám's Dominions, and Baluchistan.

The continued increase in the output of coal, and especially in Bengal, is eminently satisfactory. Ten years ago India was producing 1·7 million tons a year ; now the output has risen to 4·6 millions. The possibility of restoring to India some of its former glory as an iron-producing country was discussed at the late meeting of the Iron and Steel Institute in Manchester. The author of one of the papers† read at the meeting comes to the conclusion that "nothing but English capital and modern "appliances are required to establish a thriving iron and steel manufacture in the premier "state of India (Hyderabad)" ; and a second writer, Major Mahon,‡ is of opinion that the rich ore of the Madras Presidency could be profitably smelted with the aid of Bengal coal.

Cobalt.—In his report for 1896 Mr. Grundy states that cobalt mining is an industry of some importance in Jeypore.

* Official Return furnished by Mr. James Grundy, the Inspector of Mines for India.
† Shamsul Ulama Syed Ali Bilgrami, "Iron Industry in the Territory of His Highness the Nizam of Hyderabad, Deccan."
‡ "India as a Centre for Steel Manufacture."

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INDIA—*continued.*

Gold.—The most important mineral industry in India is gold mining; small quantities of the precious metal are washed from river sands in very many parts of the country, but the total amount so obtained is insignificant with the output of the quartz veins of Mysore. The value of the gold obtained is nearly double that of the coal.

The importance of the Mysore gold mining industry becomes apparent when we consider Mr. Grundy's figures for 1898. The 22 gold mines at work employ 21,603 persons, of whom 11,736 work under-ground. The gold produced was 412,381 ounces (12,826 kilos.), of which nearly one-third came from the Mysore Gold Mine, and more than one-fourth from the Champion Reef Gold Mine, which obtained such an unenviable notoriety in 1897 on account of a disastrous accident by which 52 men lost their lives.

*Mica.**—Quarrying mica is an industry of some importance, for the number of persons employed at the Hazaribagh Quarries in Bengal was more than 5,000.

Petroleum.—The oil wells in Burma, where petroleum has been obtained for more than 2,000 years, furnish most of this mineral; and the output of the province in 1897 shows an increase of 28 per cent. compared with the previous year.

Rubies.—The chief ruby mines are in Upper Burma.

Salt.—The sources of the salt supply are: (*a*) lakes and pits of Rajputana; (*b*) evaporation of sea water in various places; (*c*) rock-salt mines of the Punjab, Kohat, and Mandi State, and brine wells of the Punjab.

Saltpetre.†—The nitre of India is obtained from a natural efflorescence from the soil, especially in the province of Behar. The crude earth is purified by solution, filtration, evaporation, and crystallization.

The area over which saltpetre is manufactured is estimated at 232,314 square miles; and according to the census of 1891 there were 119,558 saltpetre workers and sellers in India.

Soda Salts.—The carbonate and the sulphate of soda are manufactured in very many districts of India from the surface soil or from saline efflorescences, in like manner to saltpetre.

TABLE 324.

PERSONS EMPLOYED in and about MINES in INDIA for the Year ending 31st December 1898.‡

Kind of Mines.	Under-ground.			Above-ground.			Total Below and Above ground.
	Males.	Females.	Total.	Males.	Females.	Total.	
Alum	1,200	—	1,200	300	—	300	1,500§
Coal	87,046	58,756	145,802	54,661	41,649	96,310	242,112
Cobalt ore	1,500	—	1,500	125	150	275	1,775
Copper ore	1,721	—	1,721	100	—	100	1,821
Gold	12,810	—	12,810	9,326	1,522	10,848	23,658
Gypsum	—	—	—	200	52	252	252
Iron ore	1,171	730	1,901	94	35	129	2,030
Manganese ore	—	—	—	2,100	1,430	3,530	3,530
Mica	11,748	980	12,728	13,490	5,141	18,631	31,359
Plumbago	262	—	262	80	45	125	387
Rubies, sapphires, spinels, and garnets.	—	—	—	—	—	—	(Not stated.)
Salt	693	549	1,242	93	10	103	1,345
Stone, limestone, slate, &c.	121	10	131	809	179	988	1,119
Total	118,272	61,025	179,297	81,378	50,213	131,591	310,888

* Hooper, *Review of the Mineral Production in India for 1897*, Calcutta, 1898, p. 49.
† *Ibidem*, p. 54.
‡ Official Return furnished by Mr. James Grundy, the Inspector of Mines for India.
§ Including some persons employed at copper mines.

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INDIA—*continued.*

TABLE 325.

SUMMARY of OUTPUT and VALUE of MINERALS during the Years 1897 and 1898.

Mineral.	1897.*			1898.		
	Quantity.		Value.	Quantity.		Value
	Statute Tons.	*Metric Tons.*	Rs.	Statute Tons.	*Metric Tons.*	Rs.
Alum	411	*418*	(Not stated)			
Amber	cwts. 26½	*kilos. 1,346*	4,990			
Antimony	(Not stated)	—	—			
Asbestos	lbs. 560	*kilos. 254*	40			
Beryl	(Not stated)	—	(Not stated)			
Borax (exported) ...	276	*280*	94,488			
Clay	538,098	*567,054*	4,47,669			
Do.	445,554	*452,704*	(Not stated)			
Coal	4,063,127	*4,128,330*	1,24,66,588	4,136,813‡	*4,203,199*	
Copper ores	32	*33*	275			
Corundum	121	*123*	3,749			
Do.	203	*206*	(Not stated)			
Diamonds	carats 301	*grams 62*	19,031			
Fuller's earth	313	*318*	500			
Garnet	carats 363,760	—	(Not stated)			
Gold	ozs. 389,028	*kilos. 12,100*	2,23,25,758	ozs. 412,381§	*kilos. 12 826*	
Granite	318,322	*323.430*	5,17,525			
Do.	304,978	*309.872*	(Not stated)			
Gravel and rubble ...	34,370	*34,922*	22,156			
Do. do. ...	6,153	*6,252*	(Not stated)			
Gypsum	8,058	*8,187*	4,330			
Iron ores	43,314	*44,009*	1,52,300			
Jade	115	*117*	83,436			
Laterite	373,479	*379,472*	3,76,296			
Do.	5,925,238	*5,020,322*	(Not stated)			
Lead ores	(Not stated)	—	(Not stated)			
Limestone	1,070,298	*1,087,474*	7.82,693			
Do.	761,613	*773,835*	(Not stated)			
Magnesia	(Not stated)	—	(Not stated)			
Manganese ores	73,680	*74,862*	58,94,40†			
Mica	446	*453*	1,99,003			
Do	246	*250*	(Not stated)			
Ochre	(Not stated)	—	—			
Petroleum	galls. 19,128,828	*litres 86,911,027*	22,63,772			
Plumbago	60	*61*	(Not stated)			
Quartz, onyx, agate, Cornelian rock crystal, &c.	(Not stated)	—	(Not stated)			
Rubies	—	—	8,02,452			
Salt	923,118	*937,932*	48.76,294			
Saltpetre (exported) ...	26,423	—	57,21.638			
Sandstone	186,301	*189,291*	1,93.315			
Do.	755,123	*767,241*	(Not stated)			
Slabstone	(Not stated)	—	2,561			
Slate	17,128	*17,403*	40,408			
Do.	9,041	*9,186*	(Not stated)			
Soapsand	149	*151*	209			
Soapstone	969	*984*	15,660			
Do.	151	*154*	(Not stated)			
Soda salts	(Not stated)	—	(Not stated)			
Stone, miscellaneous ...	66,720	*67,791*	31,006			
Do. do. ...	22,212	*22,568*	(Not stated)			
Tin ore	61	*62*	39.555			
Trap	104,919	*106,603*	78,519			
Do.	33,621	*34,161*	(Not stated)			
Tourmaline	lbs. 560	*kilos. 254*	(Not stated)			

* Watt, *Review of the Mineral Production in India for* 1897. Calcutta 1898
† Estimated from export value.
‡ Official Return furnished by Mr. James Grundy, the Inspector of Mines for India.
§ Ibid.—Output of Mysore Gold Mines only.

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INDIA—*continued.*

TABLE 326.

OUTPUT and VALUE of MINERALS, classified according to the PROVINCES or STATES, for the Years 1896 and 1897.*

Mineral and Province or State where wrought.	1896.			1897.		
	Quantity.		Value.	Quantity.		Value.
INDIA.						
Aden†.	Statute Tons.	*Metric Tons.*	Rupees.‡	Statute Tons.	*Metric Tons.*	Rupees.‡
Salt	44,311	*45,022*	2,62,757	43,828	*44,531*	2,59,798
Total value in £ sterling	—	—	£14,506	—	—	£15,696
Ajmere-Merwara.						
Clay	8,266	*8,399*	790	2,790	*2,835*	235
Granite...	11,745	*11,933*	2,300	6,246	*6,346*	1,260
Limestone	1,968	*2,000*	272	757	*769*	108
Sandstone	2,202	*2,237*	1,205	8,282	*8,415*	4,225
Stone, miscellaneous	55	*56*	375	60	*61*	486
Total value in Rupees ...	—	—	4,942	—	—	6,314
„ „ in £ sterling	—	—	£273	—	—	£382
Assam.						
Coal	177,259	*180,104*	12,35,052	185,533	*188,510*	12,89,897
Limestone	76,346	*77,571*	83,239	43,756	*44,458*	86,847
Petroleum	galls. 238,730	*litres 1,084,660*	23,873	galls. 222,077	*litres 1,008,998*	22,208
Total value in Rupees ...	—	—	13,42,164	—	—	13,98,952
„ „ in £ sterling	—	—	£74,099	—	—	£84,519
Bengal.						
Beryl	(Not stated)	—	(Not stated)	(Not stated)	—	(Not stated)
Borax (exported)	329	*334*	1,17,359	265	*269*	89,934
Clay	69,037	*70,145*	(Not stated)	44,969	*45,691*	(Not stated)
Coal	3,037,920	*3,086,671*	81,46,411	3,142,497	*3,192,926*	79,15,781
Granite	29,948	*30,429*	13,183	64,636	*65,673*	10,598
Gravel and rubble	18,135	*18,426*	9,397	33,429	*33,965*	21,215
Iron ore	6,120	*6,218*	11,965	36,280	*36,862*	65,696
Laterite	43,040	*43,731*	(Not stated)	115,021	*166,867*	(Not stated)
Lead ore	—	—	—	—	—	—
Limestone	48.434	*49,211*	19,888§	75,941	*77,160*	31,117
Mica	309	*314*	3,42,333	443	*450*	1,98,792
Salt	8,507	*8,644*	59,636	7,255	*7,371*	50,540
Sandstone	25,495	*25,904*	(Not stated)	28,932	*29,396*	(Not stated)
Slate	1,068	*1,085*	„	750	*762*	„
Soapstone	59	*60*	„	34	*35*	„
Trap	5,885	*5,979*	„	26,060	*26,478*	„
	—	—	—	—	—	—
Berar.						
Clay	670	*681*	335	420	*427*	210
Granite	99,761	*101,362*	2,227	—	—	—
Laterite	540	*549*	270	620	*630*	310
Limestone	928	*943*	832	5,632	*5,722*	6,482
Stone, miscellaneous... ...	—	—	—	—	—	—
Trap	91,509	*92,977*	21,537	104,694	*106,374*	78,126
Total value in Rupees ...	—	—	25,201	—	—	85,128
„ „ in £ sterling	—	—	£1,391	—	—	£5,143
Coorg.						
Clay	1,925	*1,956*	(Not stated)	1,800	*1,829*	(Not stated)
Granite	15,648	*15,899*	46,944	9,175	*9,322*	27,525
Laterite	149	*151*	149	83	*84*	83
	—	—	—	—	—	—

* Watt, *Review of Mineral Production in India for 1896 and 1897*, Calcutta.
† Aden is under the administration of the Government of Bombay.
‡ The value of the rupee has been calculated at 1*s.* 1½*d.* for 1896 and 1*s.* 2⅛*d.* for 1897.
§ Value for 18,018 tons only.

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INDIA—*continued.*

OUTPUT and VALUE of MINERALS, classified according to PROVINCES or STATES, for the Years 1896 and 1897—*continued.*

Mineral and Province or State where wrought.	1896.			1897.		
	Quantity.		Value.	Quantity.		Value.
INDIA—*cont.*						
Madras.	Statute Tons.	*Metric Tons.*	Rupees.	Statute Tons.	*Metric Tons.*	Rupees.
Beryl	(Not stated)	—	(Not stated)	(Not stated)	—	(Not stated)
Borax (exported)	—	—	—	—	—	—
Clay	381,085	*397,122*	(Not stated)	398,785	*405,185*	(Not stated)
Coal	—	—	—	—	—	—
Corundum	20	*20*	(Not stated)	203	*206*	(Not stated)
Garnet	(Not stated)	—	(Not stated)	(Not stated)	—	(Not stated)
Gold	ozs. 1,917	*kilos. 60*	1,13,268	ozs. 897	*kilos. 27*	52,506
Granite	442,361	*449,460*	(Not stated)	301,323	*306,158*	(Not stated)
Gypsum	12	*12*	,,	—	—	—
Iron ore	2,296	*2,333*	1,920	1,011	*1,027*	1,277
Laterite	5,401,780	*5,488,466*	,,	5,809,177	*5,902,400*	,,
Lead ore	—	—	—	—	—	—
Limestone	698,930	*710,146*	(Not stated)	761,613	*773,835*	(Not stated)
Manganese	56,869	*57,778*	4,54,952*	73,680	*74,862*	5,89,440*
Mica	22	*22*	(Not stated)	246	*250*	(Not stated)
Plumbago	—	—	—	60	*61*	,,
Salt	347,545	*353,122*	20,01,968	240,796	*244,660*	13,60,170
Sandstone	531,367	*539,894*	(Not stated)	606,768	*616,505*	(Not stated)
Slate	5,333	*5,419*	,,	8,291	*8,424*	,,
Soapstone	212	*215*	,,	117	*119*	,,
Stone, miscellaneous	35,764	*36,338*	,,	22,212	*22,568*	,,
Trap	8,827	*8,969*	,,	7,561	*7,682*	,,
N.W. Provinces and Oudh.						
Limestone	479,257	—	1,79,136	618,796	*628,726*	2,22,642
Coal	1,000	*1,016*	(Not stated)	—	—	—
Gold	ozs. 81	*kilos. 3*	4,917	ozs. 50	*kilos. 2*	2,761
Granite	2,063	*2,096*	(Not stated)	3,655	*3,714*	(Not stated)
Salt	1,152	*1,170*	9,154	1,476	*1,500*	11,190
Sandstone	150,818	*153,238*	(Not stated)	119,423	*121,339*	(Not stated)
Bombay, including Sindh and Native States.						
Borax (exported)	6	*6*	2,779	11	*11*	4,554
Laterite	—	—	—	1,040	*1,057*	(Not stated)
Lead ore	—	—	—	—	—	—
Limestone	—	—	—	674	*685*	327
Salt	351,366	*357,005*	11,06,093	404,374	*410,863*	12,95,230
Soapstone	—	—	—	(Not stated)	—	500
Burma.						
Amber	cwt. 14	*kilos. 711*	2,330	cwt. 26½	*kilos. 1,346*	4,990
Clay	137,513	*139,720*	1,61,482	195,462	*198,599*	2,01,254
Coal	22,993	*23,362*	1,01,455	11,472	*11,656*	73,851
Fuller's earth	—	—	—	—	—	—
Garnet	(Not stated)	—	(Not stated)	(Not stated)	—	(Not stated)
Gold	—	—	—	—	—	—
Granite	3,907	*3,970*	4,706	3,807	*3,868*	3,677
Gravel and rubble	112	*114*	112	941	*956*	941
Gravel and rubble	—	—	—	6,153	*6,252*	(Not stated)
Jade	150	*152*	1,50,341	115	*117*	83,436
Laterite	51,414	*52,239*	49,050	124,570	*126,569*	1,66,817
Lead ore	(Not stated)	—	(Not stated)	(Not stated)	—	(Not stated)
Limestone	17,058	*17,332*	39,194	11,076	*11,254*	33,351
Mica	—	—	—	—	—	—
Petroleum	gals. 14,816,000	*litres 67,315,874*	17,69,145	gals. 18,904,710	*litres 85,892,756*	22,41,289
Rubies†	(Not stated)	(*Not stated*)	6,87,537	(Not stated)	—	8,02,452
Salt	17,365	*17,644*	6,67,631	21,895	*22,246*	8,21,250

* Estimated from the value exported.
† The figures relate to the output of the Ruby Mines Co. only.

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INDIA—*continued.*

OUTPUT and VALUE of MINERALS, classified according to PROVINCES or STATES, for the Years 1896 and 1897—*continued.*

Mineral and Province or State where wrought.	1896. Quantity.		1896. Value.	1897. Quantity.		1897. Value.
INDIA—*cont.*						
Burma—cont.	Statute Tons.	*Metric Tons.*	Rupees.	Statute Tons.	*Metric Tons.*	Rupees.
Sandstone	3,627	*3,685*	10,269	17,507	*17,788*	34,549
Soapstone	12	*12*	6,000	505	*513*	11,330
Soapsand	169	*172*	240	149	*151*	209
Tin ore	81	*82*	81,443	61	*62*	39,555
Tourmaline	cwts. 2½	—	57,750	cwts. 5	—	(Not stated)
Trap	—	—	—	190	*193*	143
	—	—	—	—	—	—
Central Provinces.						
Clay	58	*59*	(Not stated)	19	*19*	7
Coal	141,185	*143,451*	6,67,289	131,629	*133,741*	6,16,456
Granite	(Not stated)	—	(Not stated)	(Not stated)	—	(Not stated)
Iron ore	1,827	*1,856*	4,614	2,387	*2,425*	5,517
Laterite	2,325	*2,362*	(Not stated)	(Not stated)	—	(Not stated)
Lead ore	—	—	—	—	—	—
Limestone	346	*351*	(Not stated)	40,000	*40,642*	35,000
Sandstone	232	*236*	,,	189	*192*	284
	—	—	—	—	—	—
Punjab.						
Alum	411	*418*	(Not stated)	411	*418*	(Not stated)
Coal	79,017	*80,285*	6,59,640	92,792	*94,281*	7,75,434
Gold	ozs. 447	*kilos. 14*	22,612	ozs. 447	*kilos. 14*	22,612
Iron ore	11	*11*	39	4	*4*	28
Lead ore	(Not stated)	—	(Not stated)	(Not stated)	—	(Not stated)
Petroleum	2,364	*10,741*	337	2,041	*2,074*	275
Salt	114,650	*116,490*	5,56,223	78,379	*79,637*	3,62,600
	—	—	—	—	—	—
Native States.						
Asbestos	cwts. 6	*kilos. 304*	48	cwts. 5	*kilos. 253*	40
Beryl	(Not stated)	—	(Not stated)	(Not stated)	—	(Not stated)
Clay	226,849	*230,490*	2,55,867	359,407	*365,175*	2,45,963
Coal	388,639	*394,876*	14,50,423	499,204	*507,215*	17,95,169
Copper	21	*21*	840	32	*33*	275
Corundum	130	*132*	4,809	120	*122*	3,749
Diamonds	carats 321	*grams. 66*	22,017	carats 301	*grams. 62*	19,031
Fuller's earth	—	—	—	313	*318*	500
Garnet	carats 363,760	*kilos. 93*	(Not stated)	carats 363,760	*kilos. 93*	(Not stated)
Gold	ozs. 340,363	*kilos. 10,586*	2,11,17,673	ozs. 387,634	*kilos. 12,057*	2,22,47,879
Granite	217,065	*220,548*	4,29,748	234,458	*238,220*	4,74,465
Gypsum	7,473	*7,593*	4,066	8,058	*8,187*	4,330
Iron ore	3,522	*3,579*	70,362	3,632	*3,690*	79,782
Laterite	275,952	*280,380*	2,31,472	248,206	*252,189*	2,09,086
Lead ore	(Not stated)	—	(Not stated)	(Not stated)	—	(Not stated)
Limestone	273,933	*278,329*	3,69,741	273,666	*278,058*	3,66,819
Mica	2	*2*	137	3	*3*	211
Ochre	—	—	—	(Not stated)	—	25
Salt	141,848	*144,124*	8,15,822	125,115	*127,123*	7,15,520
Sandstone	271,737	*276,098*	3,10,609	160,323	*162,896*	1,54,257
Slabstone	(Not stated)	—	2,922	(Not stated)	—	2,561
Slate	15,724	*15,976*	38,833	17,128	*17,403*	40,408
Soapstone	640	*650*	4,879	464	*471*	1,590
Do.	—	—	—	(Not stated)	—	2,240
Stone, miscellaneous	42,948	*43,637*	23,065	66,660	*67,730*	30,520
Trap	35	*36*	250	35	*36*	250
	—	—	—	—	—	—
	—	—	—	—	—	—

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INDIA—*continued.*

TABLE 327.

NUMBER of DEATHS from ACCIDENTS at certain classes of MINES and OPEN WORKINGS during the Years 1897 and 1898.

Class of Mines.	1897. Number of Deaths.			1898. Number of Deaths.		
	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.
Coal	64	3	67*	34	9	43
Gold†	101	4	105	54	6	60
Manganese	—	1	1	—	—	—
Mica	—	1	1	1	1	2
Salt	—	—	—	—	1	1
Total	165	9	174	89	17	106

In most cases a fall of roof causes only one death, and such an accident as that which occurred on the 12th June 1897 at the Cherra Coal Mine in Assam, and killed 17 persons is almost unprecedented. In this case the fall of roof was due to a terrific earthquake, and Mr. Grundy has been at some pains to ascertain how other mines were affected by it.

TABLE 328.

DEATH-RATE from ACCIDENTS at certain classes of MINES and OPEN WORKINGS during the Years 1897 and 1898.

Class of Mines.	1897. Death-rate per 1,000 Persons Employed.‡			1898. Death-rate per 1,000 Persons Employed.		
	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.
Coal	·44	·03	·28§	·23	·09	·18§
Gold	—	—	4·44	4·22	·55	2·54
Manganese	—	·28	·28	—	—	—
Mica	—	·05	·03	·08	·05	·06
Salt	—	—	—	—	9·71	·74
Total	—	—	·58	·52	·13	·35

* Including 20 persons employed in Mines whose deaths were attributable to an earthquake.
† Including Mysore Gold Mines.
‡ Calculated on the number of persons employed in 1898.
§ Too much stress must not be laid upon these surprisingly low figures, as Mr. Grundy is of opinion that his lists of accidents are not complete.

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INDIA—*continued.*

TABLE 329.

DEATHS from ACCIDENTS at the MYSORE GOLD MINES.*

Year.	Persons Employed.	Deaths.			Death-rate per 1,000 Persons Employed.		
		Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.
1896	16,740	39	4	43	4·24	·53	2·57
1897	19,868	93	4	97	—	—	4·88
1898	21,603	48	5	**53**	4·09	·51	**2·45**
Average death-rate	—	—	—	—	—	—	3·37

In the introduction to the General Report and Statistics for 1897 (page 276), I pointed out that a confusion of tongues is a possible cause of accidents. It stands to reason that want of familiarity with the language used by the officials or fellow-workmen' may engender misunderstandings, with occasionally very serious effects. Publication of rules in all tongues commonly used is therefore desirable. The babel which exists among the workers at the Mysore† gold mines is evident from the fact that the mining rules have had to be translated into no less than six languages, viz., Tamil, Telugu, Malayalam, Canarese, Hindustáni and Italian.

Labuan. (*See* BRITISH BORNEO.)

Leeward Islands. (*See* REDONDA AND SOMBRERO.)

Malta.

A soft oolitic limestone is quarried for building purposes.

Beds of phosphatic nodules and phosphatized rock‡ exist in the Island, but do not appear to have been worked at present.

Natal (*including* ZULULAND).§

According to the Report of the Commissioner, the mining industry of Natal continues to make substantial progress. The output of coal increased very considerably, and rose to 387,811 tons in 1898.

Numerous recent discoveries show that the Colony is rich in copper ore, though in the case of gold the results have been disappointing ; the Commissioner is, nevertheless, confident that there is a prosperous future in store.

* Official Return furnished by Mr. James Grundy, the Inspector of Mines for India.
† Mysore Geological Department. *Report of the Chief Inspector of Mines for the year 1898.* p. 8.
‡ *Eng. Min. Jour.*, Vol. LIV., 1892, p. 200.
§ *Reports on the Mining Industry of Natal for 1898.* Pietermaritzburg, 1899.

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NATAL—*continued.*

Other minerals which are likely to be profitably worked in the future are asbestos, graphite, limestone, marble, mica, nickel ore, and slate.

TABLE 330.

PERSONS EMPLOYED at COAL PRODUCING MINES during the Years 1897 and 1898.

Year.	Above and Below Ground.			
	Europeans.	Natives.	Indians.	Total.
1897	73	1,015	472	1,560
1898	116	1,753	854	2,723

TABLE 331.

QUANTITY and VALUE of COAL and GOLD produced during the Years 1897 and 1898.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Coal	243,960	*247,875*	121,980	387,811	*394,034*	75,015
Gold	ozs. 97	*kilos. 3*	340	ozs. 17	*kilo. 1*	60

TABLE 332.

DEATHS from ACCIDENTS at COAL PRODUCING MINES during the Years 1897 and 1898.

Year.	Below-ground.			Above-ground.			Total Below-ground and Above-ground.	Death-rate per 1,000 Persons Employed.
	Males.	Females.	Total.	Males.	Females.	Total.		
1897	7	—	7	—	—	—	7	4·48
1898	9	—	9	—	—	—	9	3·30

The number of deaths which occurred at non-producing collieries during the year 1898 was 9, but as the number of persons employed at these collieries is not accurately known, the death-rate cannot be calculated.

The "Natal Mines Act, 1899," based upon the recommendations of a Government Committee, consolidates and amends the mining laws of Natal and Zululand. It will come into force very shortly.

Under the powers conferred upon the Governor, regulations have been drawn up for the control and safe working of mines. The code is very long and complete. The new Natal regulations are largely drawn from the excellent code of the South African Republic, parts of which might be copied with advantage in this country.

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Newfoundland.

Newfoundland is well-known as a copper-producing country, and Mr. Collins,* from whose pamphlet the following particulars are taken, reckons that it has produced 50,000 tons of fine copper, worth at least three millions sterling, since the ore was first discovered in 1857. He states that the coal resources of the Island are likely to bear valuable fruit in the near future. Gold has been discovered. The hæmatite of Great Bell Island is being shipped on an extensive scale to Nova Scotia. It is expected that the Dominion Iron and Steel Company will soon employ 4,000 men at Bell Island † and extract a million tons of ore yearly. Iron pyrites has been largely worked; rich veins of argentiferous lead ore have furnished supplies for exports at various times. Among other minerals, deposits of antimony ore, arsenical pyrites, asbestos, chrome iron ore, gypsum, petroleum and zinc blende are known to exist and await exploitation.

TABLE 333.

QUANTITY and VALUE of the MINERALS produced during the Years 1897 and 1898.‡

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Arsenical Pyrites	125	*127*	(Not stated)	—	—	—
Chromite	2,300	*2,337*	6,853	646	*656*	2,959
Coal	—	—	—	2,900	*2,946*	2,383
Copper ore and regulus ...	68,323	*69,419*	141,860	66,798	*69,870*	134,947
Granite...	120	*122*	207	4,000	*4,064*	4,109
Iron ore	58,940	*59,886*	12,111	102,000	*103,637*	20,959
Manganese	1,500	*1,524*	3,699	—	—	—
Iron pyrites	32,790	*33,316*	33,688	32,335	*32,854*	33,220
Slate (squares)	300	—	277	300	*305*	277
Stone :—						
Building	—	—	—	100	*102*	82
Paving	—	—	—	1,700	*1,727*	2,794
Total Value... ...	—	—	198,695	—	—	201,730

New Guinea (*see* BRITISH NEW GUINEA).

New South Wales.

Coal and the ores of gold, lead, and silver are the principal minerals worked in this Colony.

Coal.—The existence of coal has now been known for a hundred years, and the quantity raised during the century is reckoned to be more than 76 million tons, of which more than 75 million have been obtained since 1857. The output for 1898, which exceeded 4⅞ million tons, is the greatest hitherto recorded.

The coal-bearing areas of the Colony are well shown upon a sketch map in Mr. A. A. Atkinson's report;§ the largest collieries are in the district north of Newcastle, and some produce more than 200,000 tons a year each.‖

* *Newfoundland, its Mineral and Other Resources.* J. H. Collins.
† *Times*, 23rd August 1899.
‡ Return furnished by J. P. Howley, Director of Geological Survey of Newfoundland.
§ *Annual Report of the Department of Mines and Agriculture for 1897*: Sydney, 1898, p. 84.
‖ *Ibid.*, p. 57.

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NEW SOUTH WALES—*continued.*

It is satisfactory to note that Mr. Atkinson, in writing his report, follows the arrangement of the British Inspectors of Mines; this enables the comparison with the mother country to be made very readily, and it would be very convenient if other colonies adopted the same plan.

*Copper.**—The rise in the price of the metal has caused more attention to be directed to the copper resources of the Colony. The principal mine at the present time is at Cobar.

Diamonds.—The fact that diamonds are found in several parts of the Colony is of much scientific interest, and working the gems may some day become an industry of commercial importance.

Gold.—The most important gold yielding districts in 1897 were Bathurst, Lachlan, and Peel and Uralla.

Following the lead of New Zealand, dredging for gold has been commenced in New South Wales.

Silver and lead.—The silver and lead mining of the Colony is practically concentrated at Broken Hill, in the Albert Mining District.

TABLE 334.

PERSONS EMPLOYED at all MINES during the Years 1897 and 1898.†

Kind of Mines.	1897.			1898.		
	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.
Coal	7,831	1,795	9,626	8,192	2,066	**10,258**
Gold { alluvial ...	—	—	9,030‡	—	—	**8,303§**
Gold { quartz ...	—	—	12,256	—	—	**11,616**
Shale	246	107	353	197	64	**261**
Silver	—	—	6,204	—	—	**6,396**
Other mines ...	—	—	3,739	—	—	**3,996**
Total ...	—	—	41,208	—	—	**40,830**

* Carne. "The Copper Mining Industry of New South Wales," *Mineral Resources, No. 6. Department of Mines and Agriculture*, Sydney, 1899.
† *Annual Report of the Department of Mines and Agriculture for 1897*, pp. 57, 58, and 80; and *for 1898*, pp. 65 and 90.
‡ Including 1,002 Chinese.
§ Including 864 Chinese.

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NEW SOUTH WALES—*continued.*

TABLE 335.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.*

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Alunite	724	*736*	2,172	2,941	*2,988*	8,823
Antimony and Antimony ore ...	169	*172*	3,612	82	*83*	916
Bismuth	3	*3*	800	29	*29*	4,615
Chrome	3,380	*3,434*	10,269	2,111	*2,145*	6,301
Coal	4,383,591	*4,453,937*	1,230,041	4,706,251	*4,781,775*	1,271,832
Cobalt	—	—	—	117	*119*	560
Coke	64,202	*65,232*	45,392	82,222	*83,541*	64,135
Copper (ingots)	6,756	*6,864*	299,829	5,654	*5,745*	280,048
„ (ore and regulus)... ...	166	*169*	851	178	*181*	839
Diamonds	carats 9,189	*grams 1,887*	3,250	carats 16,493	*grams 3,387*	6,060
Fireclay	—	—	—	14	*14*	32
Gold	ozs. 302,817	*kilos. 9,419*	1,128,164	ozs. 340,493	*kilos. 10,590*	1,244,330
Iron, oxide of	230	*234*	536	392	*398*	832
Lead (pig)	32	*33*	398	1,718	*1,746*	19,282
Limestone (flux)	67,590	*68,675*	41,798	9,253	*9,401*	5,783
Manganese	—	—	—	1	*1*	5
Oil shale	34,090	*34,637*	40,612	29,689	*30,165*	31,834
Opal	—	—	95,000	—	—	80,000
Platinum	ozs. 1,966	*kilos. 56*	2,949	ozs. 1,250	*kilos. 39*	2,062
Silver (ingots and matte) ...	ozs. 150,005	*kilos. 4,665*	16,711	ozs. 533,059	*kilos. 16,580*	59,278
Silver lead and ore (*a*)	289,018	*293,656*	1,681,528	398,569	*404,965*	1,644,777
Tin (ingots)	1,141	*1,159*	70,128	894	*908*	60,565
„ (ore)	14	*14*	560	1	*1*	35
Zinc ore	28,842	*29,305*	23,688	38,941	*39,566*	28,941
Sundry minerals (including building stone).	—	—	8,125	—	—	2,863
Total value	—	—	4,706,413	—	—	4,824,748

(*a*) As the bulk of the silver is exported in the form of silver-lead, the quantity of fine silver contained therein can only be an approximation. It is stated in the Report of the Department of Mines (p. 82) that 12,792,504 ozs. or 397,892 kilos. of silver were won at some of the principal mines in the Colony during the year 1898.

TABLE 336.

DEATHS from ACCIDENTS at all MINES during the Years 1897 and 1898.†

Kind of Mines.	1897.		1898.	
	Number of Deaths from Accidents.	Death-rate per 1,000 Persons Employed.	Number of Deaths from Accidents.	Death-rate per 1,000 Persons Employed.
Coal and shale ...	16	1·60	25	2·38
Gold { alluvial ...	8	0·88	—	—
Gold { quartz ...	7	0·57	10	·86
Silver and lead ..	14	2·26	19	2·97
Other mines... ...	6	1·60	6	1·50
Total	51	1·24	60	1·47

* *Annual Report of the Department of Mines and Agriculture for 1897*, pp. 25 and 72, and *for 1898*, pp. 24 and 82.
† *Ibid.*, p. 58, and for 1898, pp. 22 and 65.

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NEW SOUTH WALES—*continued.*

TABLE 337.

DEATHS from ACCIDENTS at COAL and SHALE MINES during the Years 1897 and 1898.*

Year.	Number of Deaths from Accidents.			Death-rate per 1,000 Persons Employed.		
	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.
1897	15	1	16	1·86	0·53	1·60
1898	23	2	**25**	2·74	0·94	**2·38**

The worst accident of the year was an explosion of firedamp which caused the loss of 15 lives; firedamp, which had accumulated through inadequate ventilation, was ignited by a naked light, and the explosion was intensified by the presence of coal-dust.

The following table shews a considerable improvement since 1895 in the cases of lead poisoning at the Broken Hill mines:—

TABLE 338.

BROKEN HILL MINES.†

Year.	Number of Persons Employed.	Cases of Lead Poisoning Reported.	Percentage of Persons Affected.
1895	4,297	89	2·07
1896	5,400	44	·81
1897	6,473	17	·26
1898	**6,842**	**14**	**·20**

New Zealand.

The three important minerals worked in New Zealand are coal, gold, and kauri gum.

Coal.—The largest coal mines are on the west coast of the Middle Island; Coalbrookdale Colliery produced 192,851 tons, Kaitangata 100,750, and Millerton 87,269 last year. The total output of the Colony was 907,033 tons, against 840,713 in 1897.

Gold.—Gold is obtained in various parts of the Islands, and the precious metal is extracted from ordinary alluvial diggings, by dredging river beds and river flats, and by quartz mining. Probably there is more gold dredging in New Zealand than in any other part of the world, and this method of extraction seems to be coming more and more into favour.

According to the Minister of Mines ‡ "Material can now be dredged, washed, and the "stones and tailings elevated and conveyed clear of the pontoons at a cost of from "1*d.* to 3*d.* per cubic yard." The growing importance of the dredging industry is made manifest by his figures, which show that one-seventh of the value of the precious metal exported from the Colony came from gold obtained in this fashion.

Kauri Gum.—Digging kauri gum upon the sites of old pine forests affords employment to a large number of Europeans and natives, and the price paid for the semi-fossil resin, £60 per ton, is so great that the value exceeds the total value of the coal produced.

* *Annual Report of the Department of Mines and Agriculture for 1897*, pp. 107 and 108, and *for 1898*, pp. 113 and 115.
† *Ibid.*, p. 94.
‡ Hon. A. J. Cadman, *New Zealand, Mines Statement*, Wellington, 1899, p. 9.

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NEW ZEALAND—*continued.*

TABLE 339.

PERSONS EMPLOYED at COAL MINES during the years 1897 and 1898.*

Year.	Below-ground.	Above-ground.	Total.
1897	1,381	531	1,912
1898	1,447	556	**2,003**

TABLE 340.

PERSONS EMPLOYED at GOLD MINES during the Years ended 31st March 1898 and 1899.†

Mining District.	Alluvial Miners.		Quartz Miners.		Total.		Grand Total.	
	European.	Chinese.	European.	Chinese.	European.	Chinese.	1899.	1898.
Auckland	—	—	3,599	—	3,599	—	3,599	3,962
Marlborough	117	—	10	—	127	—	127	127
Nelson	1,573	564	619	—	2,192	564	2,756	2,762
Westland	1,909	441	27	—	1,936	441	2,377	2,517
Otago	3,383	964	466	—	3,849	964	4,813	4,830
Total	6,982	1,969	4,721	—	11,703	1,969	**13,672**	14,198

TABLE 341.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.‡

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Antimony ore	10	*10*	157	—	—	—
Coal	840,713	*854,204*	451,915	907,033	*921,589*	475,731
Coke (exported)	—	—	—	9	*9*	14
Copper ore	—	—	2	2¼	*2¼*	70
Gold	ozs. 251,645	*kilos. 7,827*	980,204	ozs. 280,175	*kilos. 8,714*	1,080,691
Kauri gum	6,641	*6,748*	398,010	9,905	*10,064*	586,767
Manganese ore	180	*182*	541	217	*220*	703
Silver	ozs. 183,892	*kilos. 5,720*	20,872	ozs. 293,851	*kilos. 9,140*	33,107
Sulphur	—	—	—	1,765	*1,793*	4,097
Sundry mixed minerals	1,561	*1,586*	5,892	63	*64*	695
Total value	—	—	1,857,593	—	—	**2,181,875**

Compared with the year 1897 there has been a marked improvement in the output of silver, and a decided increase in the production of coal and of kauri gum.

* *Inspection of Coal Mines Reports.* C.—3*b*, Wellington, 1898 and 1899.
† Hon. A. J. Cadman, *New Zealand, Mines Statement*, Wellington, 1899. C.—2, p. 21.
‡ *Ibid.*, Wellington, 1899 C.—2, p. 2.

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NEW ZEALAND—*continued.*

TABLE 342.

DEATHS from ACCIDENTS at MINES and DREDGING WORKS during the Years 1897 and 1898.*

Kind of Workings.	1897.		1898.	
	Number of Deaths.	Death-rate per 1,000 Persons Employed.	Number of Deaths.	Death-rate per 1,000 Persons Employed.
Coal mines	4	2·09	1	0·50
Gold mines	14	1·00	9	1·91
„ alluvial, hydraulic, sluicing and dredging.	5	11·90	12	1·34
Total	23	1·43	22	1·40

Mining in New Zealand is now governed by two Acts of Parliament: (1) The Coal Mines Act, 1891, and (2) The Mining Act, 1898. The former applies to *Coal Mines*, and in addition to laying down regulations for the safe and proper working of mines, deals with mining leases; the latter applies to other mines, including the getting of precious stones if the Governor so decrees by Order in Council. The new Act of 1898 contains full particulars of the privileges accorded to persons for prospecting and for taking up of claims to work minerals. Part V. contains the regulations for the safe working of mines. Mine managers must be certificated, and even the person in charge of gold extraction works by the cyanide process, and the driver of a winding engine must likewise be certificated. The code of General Rules is far more complete than that of the British "Metalliferous Mines Regulation Act, 1872."

Nigeria.

About the mineral wealth of Nigeria little can be said definitely at the present time. The region is known to contain deposits of antimony, silver, and tin.

North Borneo. (*See* BRITISH BORNEO.)

Nova Scotia. (*See* CANADA.)

Ontario. (*See under* CANADA.)

* *Papers and Reports relating to Minerals and Mining*, Wellington, 1898, C.—2, pp. 7 and 8, 1899, C.—2, p. 13.

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Queensland.*

The mineral products of Queensland are very numerous, but gold is the only one of importance at the present day; for, in spite of the large area of coal-bearing rocks, the total yearly output of coal is only about 400,000 tons.

Gold.—Queensland is blessed with many goldfields, the positions of which are indicated on a map appended to the "Annual Report of the Under-Secretary for Mines" for 1898. The most important is Charters Towers, which produced last year nearly half a million ounces of gold. The Mount Morgan field comes next with nearly 172,000 ounces, of which 165,000 stand to the credit of the famous mine which gives the field its name.

TABLE 343.

PERSONS EMPLOYED at MINES during the Years 1897 and 1898.

Kind of Mines.	1897.	1898.
Coal	1,179	1,278
Gold { alluvial	5,585†	3,889‡
Gold { vein	7,250	7,383
Other mines	873	863
Total	14,887	**13,413**

TABLE 344.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Bismuth ore	1	*1*	134	8	*8*	700
Coal	358,407	*364,159*	139,889	407,934	*414,480*	150,493
Copper ore	288	*293*	12,645	62	*63*	2,166
Gold	ozs. 807,928	*kilos. 25,129*	2,553,141	ozs. 920,048	*kilos. 28,617*	2,750,349
Lead	385	*391*	4,117	248	*252*	2,480
Manganese ore	397	*403*	1,506	67	*68*	251
Opal	—	—	10,250	—	—	6,645
Salt (exported)§	—	—	—	5	5	21
Silver	ozs. 234,065	*kilos. 7,280*	25,118	ozs. 104,021	*kilos. 3,235*	10,585
Stone§ :—						
Bluestone	65,724	*66,729*	8,233	64,850	*65,891*	5,962
Granite	6,000	*6,096*	1,050	6,985	*7,097*	1,397
Limestone	500	*508*	50	1,600	*1,626*	800
Porphyry	19,830	*20,148*	3,545	59,688	*60,646*	7,502
Sandstone	6,982	*7,094*	2,546	7,022	*7,135*	2,954
Slate	28,625	*29,084*	4,183	—	—	—
Tin ore (dressed)	1,203	*1,222*	37,509	1,025	*1,041*	36,502
Wolfram ore	13	*13*	195	78	*79*	2,540
Total value	—	—	2,804,111	—	—	**2,981,347**

* *Annual Report of the Under Secretary for Mines for 1898.* Brisbane, 1899.
† Including 897 Chinese.
‡ " 890 "
§ Statistics of Queensland for 1898, Brisbane, 1899.

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QUEENSLAND—*continued.*

TABLE 345.

DEATHS from ACCIDENTS at MINES during the Years 1897 and 1898.

Kind of Mines.	1897.		1898.	
	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.
Coal	2	1·70	—	—
Other mines ...	16	1·17	19	1·57

A Statute entitled "The Mining Act of 1898" was passed last year with the object of amending and consolidating the laws relating to goldfields, mineral lands, mines, and mining in the Colony. It is certainly an immense advantage to have one general enactment in place of the sixteen separate Statutes which are now repealed.

The first eleven parts of the Act relate mainly to the acquisition of mining rights, and to the administration of the law. Part XII. deals with what may be called co-operative drainage; a "Drainage Board" may be established to take in hand the drainage of a specified area, with power to construct and maintain drainage works, and to assess the owners of the mines in proportion to the benefit they derive from these works.

Part XIII. contains the regulations for the safe working of mines. The Government is enabled to appoint a Board of Examiners having the power to grant certificates of competency to persons desirous of becoming mining managers; but a person is not debarred from acting as a manager if he has no certificate.

The General Rules are forty in number, and contain sundry useful provisions which are not to be found in the British Statute.

In the case of "collieries," that is to say, mines worked for "coal, kerosene-shale, stratified ironstone or fireclay," there are further provisions.

The power of the Legislature is greatly increased by Part XIV., which enables the Governor from time to time to make other regulations, and so deal with various mining matters. Certain of these regulations are contained in the supplement to the *Queensland Government Gazette*, 28th April, 1899 (Vol. LXXI., No. 110). They relate mainly to claims, water-right, mining leases, and drainage areas.

A useful leaflet furnishing an epitome of the principal provisions of the Act has been prepared by Mr. Rutlidge.*

Redonda (Leeward Islands).

The number of persons employed in obtaining phosphate of alumina in 1898 was about 140.

TABLE 346.

QUANTITY and VALUE of MINERAL produced during the Years 1894† and 1895.‡

Mineral.	1894.			1895.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Phosphate of alumina ...	570	*579*§	1,105	5,687	*5,778*	4,976

* Dean and Son, Ltd., London. 1899.
† *Annual Statement of the Trade of the United Kingdom for 1894.*
‡ *Official Return furnished by the Government of the Leeward Islands.*
§ Exported.

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Rhodesia.

Coal.—The coal resources are being tested in some places by sinking and driving, and the results are promising.

Gold.—Gold mining seems to be making satisfactory progress in the Colony. The output for the last four months of 1898 was 18,085 ozs.; it goes on increasing gradually, and the latest returns of the Rhodesian Chamber of Mines show a total of 60,015 ozs. for the first eleven months of the current year.

Mining in Rhodesia is regulated by the "Mines and Minerals (Existing Rights) Ordinance, 1895," and certain short amending Ordinances of 1897 and 1898. These laws deal mainly with the acquisition and tenure of mining rights, and do not contain a code of regulations for working mines like the General Rules of the British Acts.

Sarawak. (*See* BRITISH BORNEO.)

Sombrero. (LEEWARD ISLANDS.)

The phosphate of lime quarry at Sombrero is no longer worked.

South Australia.*

There are no records in the Mines Department affording information as to the number of persons employed at mines in South Australia proper, or as to the number of deaths from accidents. It is estimated, however, that during the current year about 4,000 persons are engaged in mining in that division of the Colony, and principally for copper and gold. Of the 1,533 persons engaged in mining in the Northern Territory, 93 per cent. were Chinese.

Copper.—Copper ore is by far the most important mineral of this Colony. It is obtained chiefly from mines in Yorke's Peninsula in South Australia proper. The rise in the price of the metal will no doubt stimulate the production of the South Australian mines.

Gold.—Compared with that of the other Australian Colonies, the output of gold is at present insignificant. Most of it comes from the Northern Territory.

TABLE 347.

PERSONS EMPLOYED at MINES during the Year 1898.

—	Average Number of Persons Employed in and about the Mines.
South Australia proper	4,000†
Northern Territory...	1,533
Total	**5,533**

* *Official Return furnished by Department of Mines*, Adelaide.—*Government Resident's Report on the Northern Territory for the Year 1898.*—*Statistical Register for 1898.*

† Approximate.

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SOUTH AUSTRALIA—*continued.*

TABLE 348.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Copper (exported)	4,705	*4,781*	238,277	4,771	*4,848*	244,863
Copper ore „	546	*555*	4,640	536	*545*	3,992
Gold	ozs. 33,899	*kilos. 1,054*	120,044	ozs. 31,961	*kilos. 994*	95,143
Gold ore (exported)... ...	—	—	186	—	—	322
Lead „	82	*83*	1,146	316	*321*	3,806
Mica „	—	—	4,730	—	—	100
Salt „	28,805	*29,267*	34,706	30,950	*31,447*	38,492
Silver Lead „	—	—	1,522	183 (*a*)	*186*	950
Tin ore „	—	—	10	47	*48*	220
Zinc (Spelter) „	6	*6*	118	18	*18*	218
Unenumerated ore (exported)	—	—	7	—	—	197
Total value	—	—	405,386	—	—	**388,305**

(*a*) Estimated to contain 10,980 ozs. of fine silver.

According to the Government Resident's Report there were two fatal accidents at gold mines in the Northern Territory during the year 1898.

Straits Settlements.

Apparently there is little, if any, mining in the Straits Settlements proper, viz., Penang, Province Wellesley, Malacca and Singapore ; but the adjacent Federated Malay States are great producers of tin ore (*see* p. 301).

Tasmania.*

Nature, which has done so much for Tasmania in endowing it with mineral treasures, has nevertheless put great difficulties in the way of their discovery, for the prospector has to make his way through a very rugged and densely-wooded country, which in places becomes almost impenetrable from the tangled undergrowth. It is no wonder therefore that Tasmania has lagged behind the Australian Colonies and New Zealand as a mineral producer. Now that its resources are gradually becoming known and that its railroads are being extended, mining is proceeding apace and with satisfactory results.

Tasmania is producing a little coal, but its importance at the present moment as a mineral country is due to its great deposits of the ores of copper, lead, gold, and tin.

The Official Handbook of Tasmania † contains a useful map showing the principal mineral districts.

Coal.—The output is at present insignificant.

Copper.—Mount Lyell Mine in the West Coast district is the great producer of copper, and the ore is further made valuable by containing gold and silver. The Colony, which only began to export in 1896, sent away 4,955 tons of metal last year.

* *Report of the Secretary for Mines*, 1898–9, Hobart, 1899.—"Tasmania and its Mineral Wealth." Special edition of the *Australian Mining Standard*, 1st July 1898.—Harcourt-Smith, *The Progress of the Mineral Industry of Tasmania* for the Quarter ending 31st December 1898, Hobart, 1899.

† Launceston, 1899.

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TASMANIA—*continued.*

Gold.—In addition to the gold obtained from the copper ore of Mount Lyell and its neighbours, there are numerous veins of gold-bearing quartz. The Tasmania Mine, Beaconsfield, is the largest producer.

Lead.—The Zeehan district boasts of many rich deposits of silver-bearing lead ore, and Tasmania is already producing about one half as much lead and more than fourteen times as much silver as the United Kingdom.

Tin.—As in the case of its competitor Cornwall, it was tin ore which first drew special attention to the mineral wealth of the country. For many years tin was the principal mineral export of Tasmania; though still an important product, its value is now considerably exceeded by that of the gold and argentiferous lead. Mount Bischoff continues to be one of the largest tin mines in the world.

Thanks to natural advantages and skilled management, the Anchor Tin Mine in the Eastern district is being worked at a good profit with ore yielding only one-half a per cent. of clean tin oxide (*black tin*); the total cost of mining, crushing, dressing, &c., is less than 2*s.* 6*d.* per ton treated.

TABLE 349.

PERSONS EMPLOYED at the MINES during the Years ended 30th June 1897–98 and 1898–99.

1897–98.	1898–99.
5,530	6,180

TABLE 350.

QUANTITY and VALUE of the MINERALS produced during the Years ended 30th June 1897–98 and 1898–99.

Description of Mineral.	1897–98.			1898–99.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Coal	48,501	*49,279*	38,801	44,141	*44,849*	37,915
Copper (blister)	4,956(*a*)	*5,035*	397,927	* 6,079	*6,177*	467,268
„ ore				1,889	*1,919*	31,985
Gold	ozs. 79,981½	*kilos. 2,487*	313,402	ozs. 84,189	*kilos. 2,619*	331,414
Iron ore	—	—	—	1,633	*1,659*	1,576
Silver Lead Ore	15,120	*15,363*	177,160	24,203†	*24,591*	217,735
Tin	3,229	*3,281*	199,868	2,006	*2,038*	189,847
Total value	—	—	1,127,158	—	—	1,277,740

(*a*) Exported.

TABLE 351.

DEATHS from ACCIDENTS at MINES during the Years ended 30th June 1897–98 and 1898–99.

1897–98.		1898–99.	
Number of Persons Killed.	Death-rate per 1,000 Persons Employed.	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.
13	2·35	18	2·91

* Estimated to contain 718,323 ozs. or 22,328 kilos. of fine silver.
† „ „ 2,379,962 ozs. or 73,977 kilos. of fine silver, on the assumption that 98¾ ozs. are contained in one ton of ore.

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Trinidad.*

Although coal, glance pitch, gypsum, and galena are to be found, the Colony possesses no mines, properly so called.

The only mineral workings of any consequence are the diggings for asphalt at the well-known Pitch Lake at La Brea. The insular revenue derived from this source in 1898 was £34,066.

TABLE 352.

QUANTITY and VALUE of ASPHALT exported in the Years 1897 and 1898.

	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Asphalt, purified	14,129	*14,356*	28,258	13,622	*13,841*	27,243
„ raw	110,543	*112,317*	110,543	86,574	*87,963*	86,574
Total value	—	—	138,801	—	—	113,817

Turks and Caicos Islands.†

Salt is the most important article produced in these islands. It is obtained by the solar evaporation of sea water in shallow ponds on the coast.

TABLE 353.

Mineral.	1896.			1897.		
	Quantity Exported.		Value.	Quantity Exported.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Salt	59,500	*60,455*	29,107	69,852	*70,973*	33,630

Victoria.‡

The total number of persons employed in an industry makes a fair index of its importance. In Victoria we find 31,734 engaged in mining; this figure is much the same as that of the miners in Colorado, one of the great ore-mining States of America. In Victoria, 97 per cent. of the men are employed in or about gold mines, and the remaining 3 per cent. in mining for antimony ore, coal, infusorial earth, lead ore, and tin ore.

Statisticians very properly advocate that the output of gold in different countries should be stated in ounces of fine gold and not in ounces of bar gold. The necessity of a uniform standard is very patent in the case of the Australian colonies, where we find that the bars vary in value from an average of £3 an ounce in Queensland to £4 an ounce in Victoria. Judged by its output of 837,257 ounces, Victoria occupied the third place as a gold producer in 1898, whereas if the value £3,195,197 is considered, it comes second, for the 920,048 ounces of bar gold produced by Queensland were worth only £3,000,043.

* *Blue Books, Trinidad and Tobago.* 1897 and 1898.

† Governor Sir A. W. L. Hemming, "Turks and Caicos Islands Annual Report for 1897.—*Colonial Reports*—Annual, No. 230, London, 1898 [C. 8650-28].

‡ *Annual Reports of the Secretary for Mines for Victoria* for 1897 and 1898.

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VICTORIA—*continued.*

There are now seven gold mines more than 3,000 feet deep.* The remarkable economy with which mining is sometimes carried on becomes evident from the fact that Stewart's United Company, at Bendigo, was able to pay a dividend with quartz yielding only 2 dwts. of gold to the ton.†

TABLE 354.

PERSONS EMPLOYED at MINES during the Years 1897 and 1898.

	1897.	1898.
Coal	908	893
Gold	32,820	30,804
Other Mines	76	37
Total	33,804	**31,734**

TABLE 355.

QUANTITY and VALUE of the MINERALS produced during the Years 1897 and 1898.

Mineral.	1897. Quantity.		1897. Value.	1898. Quantity.		1898. Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Antimony ore	5	*5*	20	110	*112*	510
Building stone	—	—	25,000	—	—	20,000
Brown coal	3,918	*3,981*	1,177	2,869	*2,915*	767
Clays	—	—	4,030	—	—	4,500
Coal	236,277	*240,069*	108,640	242,860	*246,757*	103,099
Gold	ozs. 812,766	*kilos. 25,280*	3,251,064	ozs. 837,257	*kilos. 26,041*	3,349,028
Infusorial earth	—	—	—	140	*142*	280
Lignite	800	*813*	200	—	—	—
Silver lead ore	—	—	—	20(*a*)	*20*	240
Tin ore	47	*48*	1,650	87	*88*	3,913
Total value	—	—	3,391,781	—	—	**3,482,337**

(*a*) Estimated to contain 2,000 ozs. of fine silver.

TABLE 356.

DEATHS from ACCIDENTS at MINES during the Years 1897 and 1898.

Kind of Mines.	1897. Number of Persons Killed.	1897. Death-rate per 1,000 Persons Employed.	1898. Number of Persons Killed.	1898. Death-rate per 1,000 Persons Employed.
Coal	3	3·30	—	—
Gold	37	1·13	44	1·43
Total	40	1·18	**44**	**1·39**

The death-rate from accidents has averaged 1·44 per 1,000 during the last 20 years. On the whole it has remained remarkably steady, for it has never reached 2, and, with the exception of one year, it has never gone below 1 per 1,000. It is to be regretted that the table given in the Report affords no means of calculating the death-rate of the underground hands separately. As in all other countries, falls of rock and earth in the mines account for more accidents than any other cause, and taking the average of the last 25 years, 42·7 per cent. of the deaths have arisen in this manner.

The Report of the Secretary for Mines for 1898 (p. 32) contains the regulations for the Examinations for Mining Surveyors, as uncertificated persons are not allowed to keep up the statutory mine plans.

* *Ibid.* for 1898, p. 15.

† *Ibid.*, pp. 5, 11, and 12

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Western Australia.*

Coal.—Several large coal-bearing districts have been discovered, the most important at present is the Collie coalfield, which appears to be of the same geological age as the Newcastle coalfield in New South Wales.

Copper.—Ores of this metal have been discovered and worked to a small extent.

Gold.—Western Australia is now our premier gold-producing Colony. The output for 1898† exceeded a million ounces, and will probably approach one and a half million ounces this year. Most of the precious metal is derived from veins, and 762,084 tons of ore treated, gave the very high average of 1 oz. 5 dwts. 5 grains per ton.

The goldfields are by no means confined to one part of the Colony; however, East Coolgardie throws all the others into the shade, as it produced in 1898 nearly one-half of the total output.

Salt.—124 tons of salt were produced at Rottnest Prison‡ by the solar evaporation of salt water.

Tin.—Like its neighbours, Western Australia is tin-bearing; but the attractions of gold mining will probably be great enough to absorb the attention of capitalists for the present.

Table 357.

Persons Employed at Gold Mines during the Years 1897 and 1898.

Year.	Number of Persons Employed.		
	Under-ground.	Above-ground.	Total.
1897	—	—	17,903
1898	7,127	5,939	13,066

Table 358.

Quantity and Value of the Minerals produced during the Years 1897 and 1898.

Mineral.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Statute Tons.	*Metric Tons.*	£	Statute Tons.	*Metric Tons.*	£
Copper ore (exported) ...	86	*87*	1,033	355	*361*	4,266
Gold (exported)	ozs. 674,994	*kilos. 20,994*	2,564,977	ozs. 1,050,184	*kilos. 32,664*	3,990,698
Lead ore (exported)	—	—	—	5	*5*	33
Mica (exported)	—	—	209	—	—	—
Salt§	159	*162*	399	124	*126*	280
Tin ore (exported)	95¼	*97*	3,275	68	*69*	2,760
Total value	—	—	2,569,893	—	—	3,998,037

* *Reports of the Department of Mines of Western Australia for the Years 1897 and 1898.*
† The amount exported appears to furnish the best estimate of the actual output.
‡ *Report on Rottnest Prison for the year 1898*, Perth, 1899.
§ Produce of Rottnest Island only.

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WESTERN AUSTRALIA—*continued.*

TABLE 359.

DEATHS from ACCIDENTS at GOLD MINES during the Years 1897 and 1898.

1897.		1898.	
Number of Persons Killed.	Death-rate per 1,000 Persons Employed.	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.
27	1·51	31	2·37

West Indies. (*See* BARBADOS, REDONDA, TRINIDAD.)

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FOREIGN COUNTRIES.

Abyssinia.*

Gold is obtained from the Wallega and Beni Shangul districts.

There is an inexhaustible supply of rock salt on the shores of Lake Assal near the coast; this salt is cut up into pieces of the size of an ordinary whetstone for a scythe, and used as money.

Algeria.

The two principal minerals raised in Algeria are iron ore and phosphate of lime. A considerable quantity of limestone is quarried, and the workings for salt and zinc ore are of some importance.

Iron Ore.—Most of the iron ore, which is magnetite and manganiferous hæmatite, is produced by mines belonging to the Mokta-el-Hadid Company in the Departments of Constantine and Oran.

Phosphate of Lime.†—The phosphate industry, which is comparatively new, for it dates back only to 1893, has already assumed large dimensions. The amount exported in 1897 was 220,000 tons against 5,000 in 1893. The output for 1898 amounted to 269,000 tons. The phosphate is quarried in the vicinity of Tébessa in the Province of Constantine, and it bids fair to become the most important mineral product of Algeria.

Salt.—Nearly all the salt was produced from lakes in the Departments of Constantine and Oran.

Zinc Ore.—The marked increase in the output of zinc ore in 1897 was not maintained during the year 1898.

TABLE 360.

PERSONS EMPLOYED during the Years 1897 and 1898.‡

Year.	At Mines.	At Underground Quarries.	At Open Quarries.
1897	1,884	650	2,795
1898	1,786	800	2,649

* Rodd. "Report on the Trade of Adis Abbara, Abyssinia." *Dipl. and Cons. Reports*, No. 1978, Ann. Ser., 1897 [C.-8648]

† Consul-General Hay-Newton, "Trade of Algeria for the year 1898." *Dipl. and Cons. Reports*, No. 2302, Ann. Ser., 1899. [C. 9044-128].

‡ *Statistique de l'Industrie Minérale en France et en Algérie pour l'année 1897*, p. 77, *Ibid. 1898*, p. 79.

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ALGERIA—*continued.*

TABLE 361.

QUANTITY and VALUE of the MINERALS produced from Mines during the Years 1897 and 1898.*

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Francs.	Metric Tons.	Francs.
Antimony ore	781	108,104	138	22,080
Brown coal	—	—	200	2,400
Iron ore	441,467	3,316,412	473,569	3,518,337
Lead ore, argentiferous	145	16,205	120	15,600
Rock salt and salt from brine ...	23,222	390,288	21,302	429,815
Zinc ore	32,269	1,507,687	29,774	1,406,707
Total Value in Francs ...	—	5,338,696	—	5,394,939
„ „ £ sterling ...	—	213,548	—	215,797

TABLE 362.

QUANTITY and VALUE of MINERALS produced from Quarries during the Years 1897 and 1898.†

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Francs.	Metric Tons.	Francs.
Clay	67,180	298,035	78,690	310,375
Flags	16,265	171,125	6,372	67,520
Gypsum	350	875	150	375
Limestone	29,640	773,800	25,975	623,915
Marble	1,660	130,750	985	150,020
Millstones	130	1,300	—	—
Onyx...	364	127,400	219	62,415
Plaster	29,120	547,365	29,750	552,925
Phosphate of lime	228,141	4,562,820	269,400	5,390,000
Sand and gravel	80,860	101,400	72,185	78,585
Stone for building	511,225	1,586,030	739,021	1,744,155
„ (rough and broken)	688,325	891,645	685,490	946,075
Total Value in Francs ...	—	9,192,545	—	9,926,360
„ „ £ sterling ...	—	367,702	—	397,054

* *Statistique de l'Industrie Minérale en France et en Algérie pour l'année 1897*, p. 37, *Ibid. 1898*, p. 37

† *Ibid.*, 1897, *Carrières*, p. 67, *Ibid.*, *1898*, p. 70.

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ALGERIA—*continued.*

TABLE 363.

DEATHS from ACCIDENTS during the Years 1897 and 1898.*

Kind of Working.	1897.		1898.	
	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.
Mines...	2	1·05	1	·56
Underground Quarries	4	6·15	1	1·25
Open Quarries	4	1·43	—	—
Total	10	1·87	2	·77

Annam. (*See* INDO-CHINA.)

Arabia.

The Arab is not a miner by nature, and there is little or no working for minerals on the great Arabian peninsula. In days gone by, according to Burton, gold mines were worked in the land of Midian.

Argentine Republic.

All writers seem to agree that the mineral resources of the Argentine Republic are great;† little, however, has been done to develop them. In addition to the ores of copper, gold, iron, lead, mercury, nickel, and silver, the Republic can produce asbestos, borax, coal, nitrate of soda, petroleum, salt, and sulphur. As railways are extended to the Andes, bringing facilities for working, the mining industry is sure to progress rapidly.

Unfortunately the National Department of Mines and Geology at Buenos Aires is unable to supply any statistics. The figures in the table below have, therefore, no official sanction.

TABLE 364.

QUANTITY and VALUE of COPPER, GOLD, and SILVER produced during the Years 1896‡ and 1897.§

Metal.	1896.		1897.	
	Quantity.	Value.	Quantity.	Value.
Copper	Metric Tons. 390	£ 18,330‖	Metric Tons. —	£ —
Gold	Kilos. 473	64,682	Kilos. 207	28,255
Silver	Kilos. 10,210	87,125¶	Kilos. 11,930	101,807¶

* *Statistique de l'Industrie Minérale en France et en Algérie pour l'année. 1897*, p. 77, *Ibid.*, *1898*, p. 79.
† "Mineral Resources of the Argentine Republic," by James McKean Rowbotham, A.M.I.C.E. *Proc., Inst., C.E.*, Vol. CXXVIII., 1896–7, Part II.
‡ *The Mining Journal*, Vol. LXVII., 1897, p. 254.
§ *Report of the Director of the United States Mint for 1898.*
‖ Value of foreign copper in London market.
¶ Coining value of fine silver.

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Aruba. (*See* DUTCH WEST INDIES.)

Austria-Hungary.

As the Governments of Austria and Hungary publish separate official statistics, it has been thought advisable to maintain the distinction in the tables which follow. Further, it is convenient to refer to Bosnia and Herzegovina in this place, as these countries are administered by Austria, though not forming part of the empire.

It is to be regretted that complete statistics for 1898 are not yet issued.

Among the famous mines of the Austro-Hungarian empire may be mentioned the workings for gold and silver in Hungary and Transylvania, iron in Styria, lead and silver at Przibram in Bohemia, quicksilver in Carniola; salt is obtained in the Austrian Alps and in Galicia, which is likewise remarkable for its petroleum and ozokerite. The bulk of the brown coal comes from Bohemia, which after Silesia is the largest producer of ordinary coal.

TABLE 365.

AUSTRIA.

PERSONS EMPLOYED at MINES, arranged according to PROVINCE in which Employed, during the Years 1897* and 1898.

Province.	Persons Employed.			
	1897.		1898.	
	Total.	Percentage of the Total Number.	Total.	Percentage of the Total Number.
Austria, Lower	564	0·45		
„ Upper	1,674	1·35		
Bohemia	57,778	46·45		
Bukowina	99	0·08		
Carinthia	3,851	3·10		
Carniola	2,394	1·92		
Dalmatia	252	0·20		
Galicia	4,632	3·72		
Görz and Gradisca	38	0·03		
Istria	762	0·61		
Moravia	10,713	8·61		
Salzburg	554	0·45		
Silesia	25,097	20·18		
Styria	14,889	11·97		
Tirol	1,096	0·88		
Vorarlberg	1	0·00		
Total	124,394	100·00	128,685	100·00

* *Statistisches Jahrbuch des k. k. Ackerbau-Ministeriums for 1897*, Vienna, Part II., No. 2, p. 123.

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AUSTRIA—*continued.*

TABLE 366.

PERSONS EMPLOYED at MINES, exclusive of SALT and OZOKERITE MINES and PETROLEUM WELLS, during the Years 1897* and 1898.†

Year.	Coal.						Brown Coal.						Iron Ore.					
	No. of Mines.	Persons Employed.					No. of Mines.	Persons Employed.					No. of Mines.	Persons Employed				
		Men.	Women.	Young Persons.	Children.	Total.		Men.	Women.	Young Persons.	Children.	Total.		Men.	Women.	Young Persons	Children.	Total.
1897 ..	133	50,904	3,228	3,933	2	58,067	260	44,771	2,148	1,161	4	48,084	57	4,962	71	236	—	5,269
1898 ..	134	53,333	3,304	4,172	--	60,809	257	46,279	2,196	1,212	3	49,690	33	5,115	28	178	2	5,323

TABLE 366—*continued.*

Year.	Other Mines.						All the Mines.					
	No. of Mines.	Persons Employed.					No. of Mines.	Persons Employed.				
		Men.	Women.	Young Persons.	Children.	Total.		Men.	Women.	Young Persons.	Children.	General Total.
1897	110	11,534	936	497	7	12,974	545	112,171	6,383	5,827	13	124,394
1898						12,863						128,035

TABLE 367.

PERSONS EMPLOYED at SALT MINES and WORKS during the Years 1897‡ and 1898.§

Country or Province.	Salt Mines.			Brine Evaporating Works and Sea Salt Works.					Total at Salt Mines and Works.				
	Men.	Young Persons.	Total.	Men.	Women.	Young Persons.	Children.	Total.	Men.	Women.	Young Persons.	Children.	Total.
Upper Austria ..									1,241	18	—	—	1,259
Salzburg									427	2	1	—	430
Bukowina									66	—	—	—	66
Styria									448	—	3	—	451
Tyrol									246	—	—	—	246
Dalmatia . ..									1,758	452	—	139	2,349
Istria									850	582	367	113	1,912
Galicia									2,004	—	—	—	2,004
Totals for 1898 ..									7,040	1,054	371	252	8,717
Totals for 1897 ..	2,302	1	2,303	4,332	1,061	408	298	6,099	6,634	1,061	409	298	8,402

* *Statistisches Jahrbuch des k. k. Ackerbau-Ministeriums for 1897*, Vienna, Part II., No. 2, pp. 124—127.
† Do. do. do. *1898*. do. No. 1, pp. 54, 55, 130, 131, 148, 149, and 171.
‡ Do. do. do. *1897*, do. No. 2, p. 136.
§ Do. do. do. *1898*, do. No. 1, pp. 190 and 191.

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AUSTRIA—*continued.*

TABLE 368.

PERSONS EMPLOYED at OZOKERITE MINES and PETROLEUM WELLS during the Years 1897 and 1898.*

Province.	Kind of Workings.	1897. Persons Employed.				1898. Persons Employed.			
		Men.	Women.	Young Persons.	Total.	Men.	Women.	Young Persons.	Total.
Galicia ...	Ozokerite ...	6,084	323	—	6,407				
„ ..	Petroleum ...	5,525	5	7	5,537				

TABLE 369.

QUANTITY and VALUE of MINERALS produced from MINES, exclusive of SALT, OZOKERITE, and PETROLEUM, during the Years 1897† and 1898.‡

Mineral.	1897. Quantity.	1897. Value.	1898. Quantity.	1898. Value.
	Metric Tons.	Florins.	Metric Tons.	Florins.
Alum shale and vitriol ore ...	21,585	17,945	28,914	21,367
Antimony ore	864	73,449	679	57,167
Asphalt	300	8,868	643	15,604
Bismuth ore	1	1,200	—	—
Brown coal	20,458,092	40,084,423	21,083,361	43,492,791
Coal	10,492,771	38,404,864	10,947,522	41,142,493
Copper ore	7,405	279,393	6,791	253,248
Gold ore	647	32,938	448§	54,876
Graphite	38,504	1,352,646	33,062	873,566
Iron ore	1,613,876	3,766,048	1,733,649	4,227,688
Lead ore	14,145	1,161,899	14,362	1,230,391
Manganese ore	6,012	47,961	6,132	47,795
Quicksilver ore	88,238	814,059	88,519	801,076
Silver ore	20,628	1,871,801	20,886‖	1,762,595
Sulphur ore	529	4,837	496	4,153
Tin ore	16	2,422	13	1,896
Tungsten ore	31	19,248	36	33,159
Uranium ore	44	45,011	51	51,719
Zinc ore	27,463	530,141	27,395	799,290
Total value in florins ...	—	88,519,153	—	94,870,874
„ „ £ sterling ...	—	£7,376,596	—	£7,905,906

* *Statistisches Jahrbuch des k. k. Ackerbau-Ministeriums* for *1897*, Vienna, Part II., No. 2, pp. 240 and 241.

† Do. do. do. *1897*, do. No. 1, pp. 164, 166–169.

‡ Do. do. do. *1898*, do. No. 1, pp. 171, 174–177.

§ 71 kilos. of fine gold were obtained at the Metallurgical Works in 1898.

‖ 40,305 kilos. of fine silver were obtained at the Metallurgical Works in 1898.

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AUSTRIA—*continued.*

TABLE 370.

QUANTITY and VALUE of SALT produced during the Years 1897 and 1898.*

Province.	Rock Salt.	Salt from Brine.	Sea Salt.	Industrial Salt.	Value reckoned according to the Monopoly Prices.
	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Florins.
Upper Austria	224	78,243	—	11,767	8,206,434
Salzburg	—	24,333	—	2,997	2,196,905
Bukowina	2,395	3,140	—	—	486,167
Styria...	824	16,617	—	2,074	1,797,899
Tyrol	18	13,235	—	951	1,104,289
Dalmatia	—	—	11,578	—	540,370
Istria	—	—	36,329	—	3,414,945
Galicia	41,591	49,963	—	45,778	8,772,488
Total for 1898 ...	45,052	185,531	47,907	63,567	26,519,497
					£2,209,958
„ 1897 ...	45,271	173,068	45,362	67,381	25,561,441
					£2,130,120

TABLE 371.

QUANTITY and VALUE of OZOKERITE and PETROLEUM produced during the Years 1897† and 1898.

Province.	Mineral.	1897.		1898.	
		Quantity.	Value.	Quantity.	Value.
		Metric Tons.	Florins.	Metric Tons.	Florins.
Galicia ...	Ozokerite	6,881	1,875,316		
„ ...	Petroleum	275,204	5,876,692		
	Total value in florins	—	7,752,008		
	„ £ sterling	—	£646,001		

* *Statistisches Jahrbuch des k. k. Ackerbau-Ministeriums* for *1898*, Vienna, Part II., No. 1, p. 191.

† Do. do. do. *1897*, do. No. 2, pp. 240 and 241.

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AUSTRIA—*continued.*

TABLE 372.

ACCIDENTS at MINES, exclusive of SALT and OZOKERITE MINES and PETROLEUM WELLS, during the Years 1896 and 1897.*

Kind of Mines.	1897.			
	Number of Deaths from Accidents.	Number of Persons severely injured.	Death-rate from Accidents per 1,000 Persons Employed.	Tons of Mineral raised per Death from Accident.
Coal (bituminous)	55	303	·95	190,777
Brown coal	94	421	1·95	217,639
Iron ore	6	34	1·14	268,979
Other mines (excluding salt and ozokerite, and petroleum wells).	10	56	·78	22,641
Total for 1897	165	814	1·28	198,734
„ previous year ...	189	750	1·58	161,325

TABLE 373.

ACCIDENTS at SALT MINES during the Years 1896 and 1897.*

Year.	Number of Deaths from Accidents.	Number of Persons injured.	Death-rate from Accidents per 1,000 Persons Employed.	Tons of Mineral raised per Death from Accident.
1896	—	6	—	—
1897	3	6	1·30	15,090

TABLE 374.

ACCIDENTS at OZOKERITE MINES and PETROLEUM WELLS during the Years 1896 and 1897.†

Kind of Workings.	1896.			1897.		
	Deaths.	Persons seriously injured.	Death-rate per 1,000 Persons Employed.	Deaths.	Persons seriously injured.	Death-rate per 1,000 Persons Employed.
Ozokerite	11	21	1·93	9	30	1·41
Petroleum ...	4	16	·88	—	26	—

The accidents have been classified according to mineral worked, place, and cause.

* *Statistischen Jahrbuch des k. k. Ackerbau-Ministeriums* for *1897*, Vienna, Part II., No. 2. pp. 150, 159, and 167.
† Do. do. do. do. pp. 253–256.

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AUSTRIA—*continued.*

TABLE 375.

DEATHS classified according to the MINERAL worked, and the PLACE of the ACCIDENT, during the Years 1896 and 1897.*

Place of Accident.	Coal.	Brown Coal.	Iron Ore.	Rock Salt.	Other Minerals.	Total.
In perpendicular shafts ...	8	15	1	—	2	26
On inclined planes	4	11	—	—	—	15
In levels	14	14	—	—	2	30
At the working face	22	47	2	—	5	76
Above ground	7	7	3	3	1	21
Total for 1897	55	94	6	3	10	168
„ previous year ...	67	99	8	—	15	189

TABLE 376.

DEATHS from ACCIDENTS, arranged according to MINERAL worked and PLACE where they happened, during the Years 1896 and 1897.†

Kind of Mines.	Percentage of Deaths.					
	Perpendicular Shafts.	Inclined Planes.	Underground Roadways.	At the Working Face.	Above-ground.	Total.
Coal	4·76	2·38	8·33	13·09	4·17	32·73
Brown coal ...	8·93	6·55	8·33	27·98	4·17	55·96
Iron	·60	—	—	1·19	1·78	3·57
Rock salt	—	—	—	—	1·78	1·78
Other mines ...	1·19	—	1·19	2·98	·60	5·96
Total for 1897 ...	15·48	8·93	17·85	45·24	12·50	100·00
„ previous year	13·23	4·77	25·93	38·09	17·98	100·00

TABLE 377.

DEATHS classified according to CAUSE of ACCIDENT in MINES (exclusive of WORKINGS for OZOKERITE and PETROLEUM) during the Years 1896 and 1897.‡

Cause of Accident.	Number of Persons killed.		Increase or Decrease.
	1896.	1897.	
By falls of roof	30	29	— 1
„ haulage or winding appliances ...	23	29	+ 6
„ stones or things falling down ...	47	46	— 1
„ machines or tools	8	4	— 4
„ falling down	23	19	— 4
„ firedamp	—	5	+ 5
„ suffocation	25	8	— 17
During descent or ascent	8	—	— 8
By travelling in cage or climbing ladders	6	4	— 2
„ blasting	7	3	— 4
While undercutting (holing)	1	—	— 1
„ timbering	6	6	=
By irruption of water	—	2	+ 2
„ other causes	5	13	+ 8
Total	189	168	— 21

* *Statistisches Jahrbuch des k. k. Ackerbau-Ministeriums* for *1897*, Vienna, Part II., No. 2, pp. 155–159.
† Do. do. do. do. p. 151.
‡ Do. do. do. do. p. 152.

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AUSTRIA—*continued.*

The preceding tables show that in the mines of Austria proper (exclusive of workings for ozokerite and petroleum) there were 168 deaths from accidents, or 21 less than in 1896.*

The accidents at the ozokerite and petroleum workings separately were as follows:—

TABLE 378.

NUMBER of DEATHS and of PERSONS seriously injured by ACCIDENTS at OZOKERITE MINES and PETROLEUM WELLS, classified according to the PLACE where the ACCIDENT happened, during the Year 1897.†

Place of Accident.	Number of Deaths from Accidents.	Number of Persons seriously injured.
In vertical shafts	2	10
In levels	2	4
At the working face ...	5	7
On surface	—	35
Total for 1897	9	56
„ previous year	15	37

The number of firedamp explosions is diminishing, for only 13 took place in 1897 in all the mines (ozokerite and petroleum workings included) of Austria proper; by these 13 explosions, 5 persons were killed, 8 seriously injured, and 9 slightly injured. As shown by the table below, 11 of the 13 explosions were due to naked lights.

TABLE 379.

Separate EXPLOSIONS of FIREDAMP, arranged according to kind of MINES or other MINERAL WORKINGS, and cause of ACCIDENT during the Year 1897.‡

Cause.	Coal Mines.	Brown Coal Mines.	Ozokerite Mines and Petroleum Wells.	Total.
Naked lights	6	5	—	11
Gauze of safety lamp being dirtied with petroleum.	—	—	1	1
Firing a shot which laid bare a blower of gas.	1	—	—	1
Total for 1897	7	5	1	13
„ previous year ...	5	6	6	17

* *Statistisches Jahrbuch des k. k. Ackerbau-Ministeriums* for *1897*, Vienna, Part II., No. 2, p. 149.
† Do. do. do. do. pp. 253 256.
‡ Do. do. do. do. pp. 264 and 265.

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BOHEMIA.

As Bohemia employs such a large proportion of the miners in Austria, details concerning this province have been extracted from the official reports.

TABLE 380.

PERSONS EMPLOYED at the various classes of MINES in BOHEMIA during the Years 1896 and 1897.*

Kind of Mines.	Men.	Women.	Young Persons.	Children.	Total.	Percentage of Total Number of Persons Employed.
Coal	17,059	1,082	1,807	2	19,950	34·52
Brown coal	28,185	955	726	—	29,866	51·70
Iron	1,620	10	49	—	1,679	2·91
Other mines...	6,027	129	127	—	6,283	10·87
Total for 1897 ...	52,891	2,176	2,709	2	57,778	100·00
„ 1896 ...	51,447	2,164	2,356	4	55,971	100·00

TABLE 381.

DEATHS at MINES during the Years 1896 and 1897.†

Kind of Mines.	Number of Deaths from Accidents.	Average Death-rate per 1,000 Persons Employed.	Metric Tons of Mineral produced per Death by Accident.
Coal	21	1·05	192,061
Brown coal	67	2·24	252,553
Iron ore	2	1·19	297,005
Other mines...	8	1·27	9,118
Total for 1897... ...	98	1·70	220,625
„ previous year	97	1·73	204,937

TABLE 382.

HUNGARY.

PERSONS EMPLOYED at all MINES (including SALT MINES) and SMELTING WORKS during the Years 1897‡ and 1898.§

Year.	Men.	Women.	Children.	Total.
1897	56,790	2,374	5,126	64,290
1898	61,688	1,649	6,544	69,881

* *Statistisches Jahrbuch des k. k. Ackerbau-Ministeriums* for *1897*, Vienna, Part II., No. 2, p. 96.
† Do. do. do. pp. 137 and 138. Also included with Austria in table on page 334.
‡ Official Return furnished by the Central Statistical Office, Budapest, and published in the *Ungarisches Statistisches Jahrbuch*, Neue Folge V., 1897, Budapest, p. 124.
§ Official Return furnished by the Central Statistical Office, Budapest.

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HUNGARY—*continued.*

TABLE 383.

QUANTITY and VALUE of MINERALS and METALS produced in 1897* and 1898.†

Mineral, Metal, or Product.	1897.		1898.	
	Quantity.	Value, Unit = 1,000 Fls.	Quantity.	Value, Unit = 1,000 Fls.
	Metric Tons.		Metric Tons.	
Alum shale	60	0·6	—	—
Antimony ore	1,800	85·3	2,201	49·8
Antimony, crude, and regulus ...	523	156·4	856	270·1
Argentiferous copper ore	—	—	—	—
Argentiferous and mercurial copper ore.	—	—	—	—
Asphalt	3,057	160·1	3,125	163·6
Auriferous and argentiferous lead and copper ore.	97,702	1,163·2	113,266	953·8
Auriferous silver ore	1,685	185·0	2,083	234·7
Bismuth ore	141	27·9	94	22·8
Briquettes	27,022	216·2	31,781	253·3
Brown coal	3,870,530	12,541·0	4,516,581	14,022·7
Coal	1,118,025	6,034·5	1,239,499	6,569·2
Copper ore	365	4·4	428	6·2
Copper vitriol	6	1·5	—	—
Gold ore (washed)	6,419	418·5	6,129§	376·2
Iron ore	1,421,129	3,778·3	1,666,836	4,527·4
Iron pyrites	44,454	176·4	58,079	230·3
Iron vitriol	592	2·9	745	4·4
Lead ore...	3,928	330·2	4,721	303·9
Manganese ore	3,976	10·0	8,055	8·3
Nickel and cobalt ore	32	3·1	—	—
Nickel and cobalt speiss	8	2·4	—	—
Petroleum	2,299	56·5	2,471	60·9
Quicksilver ore...	7	0·1	55	2·5
Salt	171,711	13,267·0	178,551	13,989·0
Silver ore	2,604	157·0	1,691‖	88·5
Sulphur	112	8·2	93	7·1
Total value in Florins	—	38,786·7	—	42,144·7
„ „ £ sterling ...	—	£3,232,225	—	£3,510,367

TABLE 384.

DEATHS at all MINES (including SALT MINES and SMELTING WORKS) during the Years 1897* and 1898.†

Year.	Number of Deaths from Accidents.	Number of Persons severely injured.	Death-rate from Accidents per 1,000 Persons Employed.
1897	81	203	1·26
1898	88	221	1·26
Comparison between 1897 and 1898	+7	+18	=

* Official Return furnished by the Central Statistical Office, Budapest, and published in *Ungarisches Statistisches Jahrbuch*, Neue Folge V., 1897, Budapest. pp. 128, 129, 130, and 134.

† Official Return furnished by the Central Statistical Office, Budapest.

§ 2,768 kilos. of fine gold were obtained at the Metallurgical Works in 1898.

‖ 18,799 Do. silver do. do do. do.

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BOSNIA AND HERZEGOVINA.*

The principal collieries in Bosnia are at Zenica and Kreka; they are worked by the State. The coal is of Tertiary age. Zenica colliery produces about 100,000 tons a year, and Kreka colliery 160,000 tons.†

TABLE 385.

PERSONS EMPLOYED at MINES and SALT WORKS during the Years 1897 and 1898.

Year.	Coal Mines.	Iron Mines.	Other Mines.	Salt Works.
1897	807	142	346	199
1898	777	154	378	163

TABLE 386.

QUANTITY and VALUE of MINERAL produced during the Years 1897 and 1898.

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Florins.	Metric Tons.	Florins.
Brown coal	229,643	489,369	271,183	566,324
Chrome ore	396	13,870	458	16,370
Copper ore	3,527	24,860	4,323	37,496
Iron ore	37,095	79,086	58,532	128,357
Iron pyrites	3,670	18,351	240	1,200 (*a*)
Manganese ore	5,344	84,429	5,319	93,154
Salt (Brine) ... (*hectolitres*)	1,138,420‡	45,536	1,177,788§	47,112
Zinc ore	—	—	10	260
Total value in Florins	—	755,501	—	890,273
,, £ sterling	—	£62,958	—	£74,189

(*a*) Estimated on value for 1897.

TABLE 387.

DEATHS at MINES during the Years 1897 and 1898.

Year.	Under-ground.			Above-ground.			Total Under and Above Ground.	Death-rate per 1,000 Persons Employed.
	Males.	Females.	Total.	Males.	Females.	Total.		
1897	—	—	—	—	—	—	—	—
1898	3	—	3	—	—	—	3	2·29

* Statistics prepared by the "Bosnisches Bureau, Montan-Abtheilung," published in the *Oesterreichische Zeitschrift für Berg- und Hüttenwesen*, XLVII. Jahrgang. 1899, pp. 298 and 299.
† Poech, *Oesterreichische Zeitschrift für Berg- und Hüttenwesen*, Vol. XLVII 1899, p. 369.
‡ Containing 12,089 tons of salt.
§ ,, 12,507 ,, ,,

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Banca and Billiton. (*See* DUTCH EAST INDIES.)

Bavaria. (*See* GERMAN EMPIRE.)

Belgium.

The workings for mineral in Belgium are classified in the official statistics under three heads: (1) Coal Mines; (2) Ore Mines; (3) Quarries. The following table shows that coal mining is by far the most important of the mineral industries of the country.

TABLE 388.

PERSONS EMPLOYED.*

Kind of Workings.	1897.			1898.		
	Under-ground.	Above-ground.	Total.	Under-ground.	Above-ground.	Total.
Coal Mines	88,341	32,041	120,382	90,289	32,557	122,846
Ore Mines...	855	1,079	1,934	797	882	1,679
Quarries (Open and Under-ground)...	2,255	30,346	32,601	—	—	35,625
Total	91,451	63,466	154,917	—	—	160,150

From the next table we learn that women and girls are still employed below-ground in the Belgian collieries, though their number is decreasing rapidly. Thirty years ago about 12 per cent. of the underground workers were females; in 1891 the percentage had dropped to 4, and last year it was reduced to four-tenths only.

TABLE 389.

PERSONS EMPLOYED at COAL MINES during the Years 1897 and 1898.†

Year.	Under-ground.							Above-ground.							Total Under-ground and Above-ground.
	Males.			Females.			Total.	Males.			Females.			Total.	
	Ages.			Ages.				Ages.			Ages.				
	12 to 14.	14 to 16.	Above 16.	14 to 16.	16 to 21.	Above 21.		12 to 14.	14 to 16.	Above 16.	14 to 16.	16 to 21.	Above 21.		
1897...	1,804	4,223	81,678	—	87	549	88,341	1,147	1,384	21,536	2,646	3,774	1,554	32,041	120,382
1898...	1,821	4,326	83,718	—	19	405	90,289	1,224	1,434	21,786	2,686	3,951	1,476	32,557	122,846

Information of a very useful character is contained in table 390 prepared annually by the Belgian Mining Department. The average output per underground worker was only 245 tons in the year 1898, compared with 371 in this country; the reason of this is the small size of the seams, which on an average are only 2 feet 2 inches (66 c.m.) thick.

* *Statistique des Mines, Minières, Carrières, Usines Métallurgiques et Appareils à Vapeur, pour l'année 1897* and corresponding volume for *1898*, Brussels, pp. 8 and 24.

† *Ibid.*, *1898*, p. 8.

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BELGIUM—*continued.*

TABLE 390.

COAL MINES.

THICKNESS of COAL SEAMS, NUMBER of PERSONS EMPLOYED, and OUTPUT per PERSON in each DISTRICT during the Year 1898, and Totals for the previous Year.*

District.	Mean useful thickness of Coal Seam.	Number of Persons Employed: Underground. At the Face.	Underground. Others.	Underground. Total.	Above-ground. Of all Classes.	General Total.	Ratios. Of Persons Employed at the Face to those Employed Underground.	Of Persons Employed Underground to Total Number Employed.	Days worked.	Number of Square Metres of Seam laid bare. In the Year.	Per Worker at the Face. Per Year.	Per Day.	Annual Output. (Metric Tons.) Per District.	Per Worker at the Face.	Per other Worker Underground.	Per Underground Worker of all Classes.	Per Surface Worker.	Per Worker Underground and Above-ground.	Daily Output. (Metric Tons.) Per Worker at the Face.	Per other Worker Underground.	Per Underground Worker of all Classes.	Per Surface Worker.	Per Worker Above and Underground.
	Metre.																						
Mons	·54	6,263	16,725	22,988	6,924	29,912	·27	·77	302	6,360,780	1,016	3·36	4,625,760	738	277	201	668	155	2·38	·92	·67	2·21	·51
Centre	·62	3,489	10,544	14,033	4,795	18,828	·25	·75	298	4,224,850	1,211	4·06	3,423,900	981	325	244	714	182	3·29	1·09	·82	2·40	·61
Charleroi	·74	7,163	21,081	28,244	12,516	40,760	·25	·69	300	8,196,250	1,148	3·83	7,811,500	1,090	370	277	624	192	3·63	1·23	·92	2·08	·64
Namur	·70	618	1,595	2,213	894	3,107	·28	·71	305	609,420	986	3·20	573,660	928	360	259	642	184	3·04	1·18	·85	2·10	·60
Liége	·69	5,015	17,796	22,811	7,428	30,239	·22	·75	308	6,177,718	1,232	4·00	5,653,515	1,127	318	248	761	187	3·66	1·03	·81	2·47	·61
Totals and Averages for 1898	·66	22,548	67,741	90,289	32,557	122,846	·25	·73	302	25,569,018	1,134	3·75	22,088,335	980	326	245	678	180	3·21	1·08	·81	2·24	·60
" " 1897	·66	22,198	66,143	88,341	32,041	120,382	·25	·74	296	24,815,796	1,113	3·76	21,492,446	968	325	243	671	179	3·27	1·10	·82	2·27	·60

* *Statistique des Mines, Minières, Carrières, Usines Métallurgiques et Appareils à vapeur, pour l'année 1898*, Brussels, 1899, pp. 10 and 11.

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BELGIUM—*continued*.

TABLE 391.

QUANTITY and VALUE of MINERALS produced from MINES and QUARRIES* for the Years 1897 and 1898.†

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
		Francs.		Francs.
Barytes ... ... *Metric Tons*	23,000	161,000	21,700	151,900
Clay ... ... „	270,715	1,799,760	287,805	2,081,200
Coal ... ... „	21,492,446	220,672,100	22,088,335	242,893,900
Felspar ... ...*Cubic Metres*	1,100	9,700	1,000	9,900
Flint for earthenware ... „	23,050	88,600	22,150	88,500
Iron ore ... ... *Metric Tons*	240,774	1,264,510	217,370	1,058,220
Lead ore ... ... „	108	16,150	133	21,504
Manganese ore ... ... „	28,372	342,700	16,440	211,500
Marl and chalk ... ...*Cubic Metres*	204,600	453,400	297,050	681,100
Ochre and other colours „	350	7,250	290	5,900
Phosphate of lime ... „	121,180	1,039,530	156,920	1,516,150
Phosphatic chalk ... „	229,380	1,144,280	224,400	1,789,400
Pyrites ... ... *Metric Tons*	1,828	19,950	147	886
Sand ... ...*Cubic Metres*	559,141	1,185,980	638,424	961,325
Slate ... ... *Number*	41,422,000	1,654,300	42,311,000	1,735,000
Slate ... ... *Cubic Metres*	1,445	24,600	210	18,300
Stone :—				
Building stone dressed „	181,746	15,384,620	215,417	15,887,670
Conglomerate ... „	220	27,500	180	23,400
Dolomite ... ... „	52,720	69,540	37,100	65,340
Flags ... ...*Square Metres*	107,572	358,230	170,672	788,250
Gravel and broken stone. *Cubic Metres*	235,495	554,095	360,960	789,500
Hone stones and scythe stones. *Number*	43,150	83,700	89,150	112,950
Limestone ... ...*Cubic Metres*	225,300	445,425	212,685	373,700
Marble ... ... „	17,797	2,359,770	16,610	2,735,500
Paving stone ... ... *Number*	95,542,700	8,699,375	108,025,000	10,081,570
Rough stone, broken stone, and lime. *Cubic Metres*	3,010,877	13,653,651	2,968,997	12,903,475
Zinc ore ... ... *Metric Tons*	10,954	578,050	11,475	747,560
Total value in Francs	—	272,097,766	—	297,733,600
„ „ £ sterling ...	—	£10,883,910	—	£11,909,344

* Excluding the two Flanders and the Province of Antwerp, which only furnish Tertiary clays for making bricks and tiles, and sand used in making glass and for other purposes.

† *Statistique des Mines, Minières, Carrières, Usines Métallurgiques et Appareils à Vapeur, pour l'année 1898*, Brussels, 1899 pp. 17, 24. 25, and 27.

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BELGIUM—*continued.*

TABLE 392.

NUMBER of DEATHS from ACCIDENTS at MINES and QUARRIES during the Years 1897 and 1898.*

Year.	Kind of Workings.	Under-ground.	Above-ground.	Total.	Number of Deaths per 1,000 Persons Employed.		
					Under-ground.	Above-ground.	Total.
1898	Coal mines	154	18	172	1·71	·55	1·40
„	Ore mines	—	—	—	—	—	—
„	Underground quarries...	9	—	9	—	—	†
1897	Coal mines	116	8	124	1·31	·25	1·03
„	Ore mines	2	—	2	2·34	—	1·03
„	Underground quarries...	3	—	3	—	—	†

Bohemia. (*See* AUSTRIA-HUNGARY.)

Bolivia.‡

Bolivia is remarkable as being the great silver-producing country of South America; it likewise yields antimony, bismuth, copper, gold, and tin.

Bismuth.—The bismuth is obtained from the Chorolque mines in the department of Potosi.

Copper Ore.—The copper ore of the Corocoro district is rich enough to pay heavy transport expenses to Mollendo, whence it is shipped to Europe.

Gold.—Gold is extracted by washing from alluvia on a small scale.

Silver.—The richness of the silver mines of the Potosi district has become proverbial; a few years ago more than one-half of the silver was produced by the Huanchaca mines.

Tin Ore.—The tin is found in veins along the eastern border of the plateau from Lake Titicaca to near the south boundary of the Republic.

Op. cit., pour l'année 1897, pp. 44 and 47, et *pour l'année 1898*, pp. 46 and 51.
† The death-rate cannot be calculated as the number of persons employed in underground quarries is not given separately.
‡ Consul St. John. "Trade, &c. of Bolivia for the year 1895." *Dipl. and Cons. Reports*, No. 1841; Ann. Ser., 1897 [C. 8277-59].

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BOLIVIA—*continued.*

TABLE 393.

QUANTITY and VALUE of MINERALS produced and exported through the Port of Antofagasta during the Years 1897 and 1898.*

Description of Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Dollars.	Metric Tons.	Dollars.
Antimony ore	673	498,050	591	591,266
Bismuth	47	491,235	—	—
Copper, ingots	12	6,213	149	59,255
„ matte	330	69,561	623	137,038
„ ore	5	1,742	145	29,047
Gold	—	—	Kilos. 39	48,107
Lead, ingots	47	9,819	210	46,105
„ silver	48	5,071	2,054	410,772
„ ore	64	6,745	27	3,103
Silver	Kilos. 88	5,573	—	—
„ ingots	Kilos. 79,660	5,044,998	Kilos. 53,138	4,357,282
„ matte	4	3,188	—	—
„ ore	19,119	20,181,260	17,253	17,252,792
„ sulphide	23	61,022	87	2,620,410
Silver and copper ore	61	12,912	6	1,343
„ „ lead ore	229	48,325	—	—
Tin, ingots	6,338	7,112,692	6,639	3,169,914
„ ore	114	72,284	429	270,102
Wolfram	—	—	94	46,926
Other ores	—	—	15	7,031
Total value in Dollars	—	33,630,690	—	29,050,493
„ „ £ sterling	—	£2,522,302	—	£2,178,787

Bonaire. (*See* DUTCH WEST INDIES.)

Borneo. (*See* BRITISH NORTH BORNEO and DUTCH EAST INDIES.)

Bosnia. (*See* AUSTRIA-HUNGARY.)

Brazil.

The fact that Brazil produces gold and precious stones leads to the idea that it is an important mining country. No doubt its mineral resources are great; but judged by the actual output they are not properly utilized. Capitalists and prospectors are discouraged by unsatisfactory mining legislation, which appears to be the main reason why the mining industry is at so low an ebb.† No official statistics are published by the Brazilian Government.

In addition to diamonds and gold, Brazil is yielding coal, iron ore, manganese ore, and monazite sand. Petroleum and the ores of copper and lead exist in workable quantities.

* Official Return furnished by the Sociedad de Fomento Fabril, Santiago, and *Estadistica Comercial de la República de Chile correspondiente al Año de 1897 and 1898*, Valparaiso.

† Acting Consul-General Rhind, "Trade of Rio de Janeiro for 1898." *Dipl. and Cons. Reports*, No. 2,284, Ann. Ser., 1899 [C 9044-110], p. 27.

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*Diamonds.**—Compared with the output of Kimberley, the total production of diamonds in Brazil, estimated at 40,000 carats, is at present insignificant. A powerful company has lately erected machinery for washing the diamondiferous gravel on a large scale, and a very great increase in the total output of the country is confidently expected. The most important diamond districts in Brazil are Diamantina, Grao Mogul, Chapada Diamantina, Bagagem, Goyaz, and Matto Grosso.

Manganese† mining is an industry of comparatively recent date in Brazil. The principal deposits are in the district of Miguel Burnier in the State of Minas Geraes; the ore is brought by rail a distance of 310 miles to the coast, and thence shipped to England and the United States. At the present time the method of working is by open quarries. There are two mines near Nazareth in the State of Bahia.

Monazite Sand‡ is obtained near the town of Prado in the north of the State of Bahia.

Phosphate of Lime.§—It is proposed to work the phosphate of lime which exists on the Island of Rata near the Island of Fernando da Noronha.

TABLE 394.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	£	Metric Tons.	£
Coal	15,173 (*a*)	(*b*)	—	—
Diamonds *‡	Kilos. 3,831 (*c*)	7,121	Carats 40,000 (*d*)	(*b*)
Gold	Kilos 1,812 **	247,228	Kilos. 3,359 ¶	458,299
Manganese ore ¶	16,054	(*b*)	26,417	(*b*)
Monazite ‡	226	4,439	—	—
Salt †	24,394	(*b*)	—	—

(*a*) Produce of Rio Grande do Sul only. (*b*) Not stated. (*c*) Exports of Bahia only.
(*d*) Estimated production of Brazil.

Bulgaria.††

TABLE 395.

NUMBER of PERSONS EMPLOYED at MINES during the Year 1894.

Under-ground.			Above-ground.			Total Above and Under Ground.
Males.	Females.	Total.	Males.	Females.	Total.	
215	—	215	95	—	95	310

* Beaumont, "A Journey to the Diamond Fields of Minas Geraes." *Dipl. and Cons. Reports*, No. 2,058, Misc. Ser., 1899 [C. 9045-22], pp. 10 and 12, and United States Consular Report. No. 424, May 1899.
† Consul-General Wagstaff, "Trade of Rio de Janeiro for the year 1897." *Dipl. and Cons. Reports*, No. 2,058, Ann. Ser., 1898 [C. 8648-80], p. 10. *Op. cit.*, Beaumont, p. 21. *Op. cit.*, Consul Nicolini, p. 6.
‡ Consul Nicolini, "Trade of Bahia for the years 1896-7-8." *Dipl. and Cons. Reports*, No. 2,282, Ann. Ser., 1899 [C. 9044-108], pp. 7 and 16.
§ Consul Howard, "Trade of Pernambuco and District for the year 1898." *Dipl. and Cons. Reports*, No. 2,288, Ann. Ser., 1899 [C. 9044-114], pp. 9 and 10.
¶ Consul Bernal, "Trade of Rio Grande do Sul for the year 1897." *Dipl. and Cons. Report*, No. 2,080, Ann. Ser., 1898, [C. 8648-102], p. 10.
¶ Acting Consul-General Rhind, "Trade of Rio de Janeiro for the year 1898." *Dipl. and Cons. Reports*, No. 2,284, Ann. Ser., 1899 [C. 9044-110], p. 27.
** *Report of the Director of the United States Mint for 1898.*
†† Official Return furnished by the Mining Department of the Bulgarian Ministry of Commerce and Agriculture. Later figures are not available.

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TABLE 396.

QUANTITY and VALUE of MINERAL produced during the Year 1894.

Mineral.	Quantity raised.	Value.
Lignite	Metric Tons. 57,340	£ 16,528

* The most important coal basins at present discovered are those of Mochino and Pernik, respectively 28 and 30 km. distant from Sophia. The coal is of Tertiary age. The colliery at Pernik is worked by the State, and is connected with the capital by a railway 32·8 km. in length.

Canary Islands.

Lava and consolidated volcanic ash are quarried in various places for supplying building stone and paving slabs.

Loose cinder, dug from the sides of volcanic cones, is utilised for the manufacture of big blocks of concrete.

Pumice stone is obtained from the flanks of the Peak of Teneriffe and exported into England.

Limestone for local use is derived from Fuerteventura, and to a small extent from Grand Canary. This latter island has a set of pans in which salt is obtained from sea-water by solar evaporation.

Celebes (*See* DUTCH EAST INDIES).

Chili.

The wealth of Chili is largely due to its mineral treasures, of which nitrate of soda is the most important.

Other important exports are: borate of lime, coal, copper, guano, gold and gold ore, iodine, manganese ore, and silver.

Coal.—The principal coal-fields are South of Concepcion. The coal, which is of Eocene age, has been extensively worked for many years at Coronel and Lota. Still further South there is coal of Miocene age extending to the Straits of Magellan.†

Nitrate of Soda.‡—In the year 1897 there were 67 saltpetre works in operation, which produced 1,186,730 metric tons of nitrate of soda and 179 metric tons of iodine§. They afforded employment to 16,727 persons, of whom 12,275 were Chilians. The principal port at which the nitrate is shipped is Iquique.

* *Berg- und hütt. Zeit.*, Vol. lv. 1896, p. 298.

† Gascoyne. "Coal-fields of Chili." *Trans. Inst. Min. Eng.*, Vol. xv., 1898, p. 237.

‡ Much information concerning the nitrate industry in Chili is contained in the report of the Fiscal Delegate to the Minister of Finance, in the *Memoria del Ministro de Hacienda presentada al Congreso Nacional en 1898*, p. 571. Santiago de Chile, 1898.

§ *Op cit.*, p. 585.

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CHILI—*continued.*

TABLE 397.

QUANTITY and VALUE of MINERALS exported during the Years 1897 and 1898.*

Description of Mineral.	1897.		1898.	
	Quantity.	Value. (*a*)	Quantity.	Value.
	Metric Tons.	Dollars.	Metric Tons.	Dollars.
Bismuth...	—	—	322	4,508
Borate of Calcium	3,154	598,755	7,028	1,124,509
Borax	14	6,035	6	3,391
Clay	20	2,106	—	—
Coal	243,968	3,944,244	282,663	4,239,943
Cobalt ore	6	658	18	1,817
Copper, ingots	19,011	11,027,280	20,600	13,759,493
„ matte	2,519	531,541	3,079	861,999
„ ore	3,396	358,299	20,301	2,022,730
Copper and Gold, ingots	—	—	Kilos. 160	2,000
„ „ „ ore...	—	—	24	2,433
Copper and Silver ore	118	53,710	87	17,392
Copper, Gold, and Silver ore... ...	—	—	6	1,300
Copper, Gold, and Silver matte ...	—	—	73	29,133
Copper and Silver matte	164	69,427	419	167,556
Fireclay	8	173	30	1,218
Gold	Kilos. 1,132	1,909,904	Kilos. 1,630	2,445,735
Gold ore...	63	60,209	8	2,554
Gold and Silver ores	260	98,391	269	57,635
Iodine	243	5,125,971	235	3,169,570
Iron ore...	5	540	—	—
Lead, ingots	324	131,054	—	—
„ silver	46	9,674	13	13,596
Lime	1	51	1	21
Manganese ore	23,528	2,978,577	20,851	447,028
Nickel ore	1	127	3	3,000
Nitrate of Soda...	1,057,639	79,043,889	1,294,227	90,675,297
Phosphate of Lime	16	1,013	488	29,266
Silver, ingots	Kilos. 143,983	8,004,587	Kilos. 139,812	6,990,035
„ ore	984	916,227	284	205,386
„ matte	739	728,870	43	21,499
„ sulphide...	183	713,311	290	434,740
Silver and Lead ores	6	1,342	12	1,557
Tin	48	54,613	8	4,900
Other Minerals...	—	42,833	—	1,400
Total Value in Dollars ...	—	116,413,411	—	126,742,641
„ „ „ £ sterling ...	—	£8,731,056	—	£9,505,698

(*a*) Converted into Dollars valued at 1*s.* 6*d.* instead of 3*s.* 2*d.* as in the General Report and Statistics for 1897.

China.†

China is rich in many minerals and more particularly in coal, which is widely distributed throughout the vast empire, and especially in the provinces of Pechili, Shan-si, Shan-tung, Ho-nan, and Hu-nan; indeed the richness in coal seems to be unparalleled. In many provinces iron ore is likewise abundant.

Among other minerals may be mentioned the ores of copper, gold, iron, lead, quicksilver, silver, tin, and zinc. Petroleum and sulphur are found in addition to the metallic ores in the south-west; whilst salt is specially abundant in Sze-chuan, in the extreme west, a province said to be highly favoured with other forms of mineral wealth.

* Official Return furnished by the Sociedad de Fomento Fabril, Santiago, and published in *Estadistica Comercial de la Republica de Chile correspondiente al ano de* 1898, Valparaiso, 1899. p. 407.

† The "salt wells of China." *Jour. Soc. Arts*, Vol. XLVI., 1898. p. 385.
Fearon and Allen.—"The Chinese, and recent industrial progress in China." *Eng. Mag.*, Vol. XVI., 1898, p. 166.
M.R.D.—"Chinese Minerals." *The Investors' Review*, Oct. 1897, p. 216.
Jameson.—"Coal and Iron in Eastern China." *Eng. Min. Jour.*, Vol. LXVI., 1898, p. 365.
Kurita.—"Coal and Iron Deposits of Eastern China." *Eng. Min. Jour.*, Vol. LXV., 1898, p. 491.

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CHINA—*continued.*

The province of Shan-tung* possesses deposits of coal, copper, diamonds, gold, iron, lead, and silver. The first-named mineral is the most important, and is already worked on a small scale and in a very primitive fashion in various parts of the province. No shaft is more than 30 yards (28 m.) deep, and the usual depth is only about 20 yards. It is expected that the harbour of Kiao-chou will be connected by rail with the Wei-hsien coalfield, the first of importance, in two years.†

An extensive bed of hæmatite in the neighbourhood of the I-chou-fu coalfield, which can be worked opencast, may be of importance to Kiao-chou in the future.

The province of Kwei-chau‡ is rich in coal, ores of copper, iron, and quicksilver.

Consul Jamieson,§ while admitting the great mineral wealth of the province of Yunnan, is of opinion that the difficulties in the way of working are so formidable that capital cannot be profitably employed in mining enterprises, at least in the southern and western sections of the province.

No mineral statistics are published by the Chinese Government.

The Director of the United States Mint states that 3,324 kilos. of gold of the estimated value of £453,614 were produced in 1897.‖

Cochin China. (*See* INDO-CHINA.)

Colombia.¶

Coal.—Coal is mined on a small scale only, though extensive beds of bituminous coal occur in various parts of the country.

Copper.—Deposits are known to exist, but they are unworked.

Emeralds.—The famous mines of Muzo have been worked continuously to obtain this gem for more than three centuries.

Gold.—This is the most important mineral of the country. The precious metal is obtained by hydraulic mining, by dredging the beds of existing rivers, and by working auriferous veins. Antoquia, Cauca, and Choco are the principal mining districts.

*Manganese ore.***—This ore is worked about 40 miles east of Colon.

Salt.—Rock salt is mined near Bogota.

TABLE 398.

QUANTITY and VALUE of GOLD, MANGANESE ORE, and SILVER produced during the Years 1896 and 1897.

Mineral.	1896.		1897.	
	Quantity.	Value.	Quantity.	Value.
		£		£
Gold†† ... ... *Kilos.*	4,514	616,017	4,514	616,017
Manganese ore ... ... *Metric Tons*	10,668‡‡	10,086	—	—
Platinum‖‖ ... ... *Kilos.*	321	(Not stated.)	364	(Not stated.)
Silver†† ... ... *Kilos.*	52,511	448,131§§	52,511	448,131§§

* Buchrücker, "Ueber eine bergmännische Forschungsreise in der Provinz Schantung." *Zeitschr. f. prakt. Geologie*, 1899, p. 206.

† Consul Hopkins, "Trade of Chefoo for the year 1898." *Dipl. and Cons. Reports*, No. 2,307, Ann. Ser., 1899 [C. 9044-133], p. 11.

‡ Prospectus of the Anglo-French Quicksilver and Mining Concession (Kwei-chau province) of China, Ltd., March 1899.

§ China, No. 3 (1898). *Consular Report on the trade of Yünnan.* [C. 9083] 1898.

‖ *Report of the Director of the United States Mint for 1898*, Washington, 1899.

¶ Granger and Treville. "Mining Districts of Colombia." *Trans. Am. Inst. Min. Eng.*, Vol. XXVIII., 1898.

** *Trans. Am. Inst. Min. Eng.*, Vol. XXVII., 1897, p. 63.

†† *Report of the Director of the United States Mint for 1898.*

‡‡ "Manganese Deposits of Panama," by E. J. Chibas, *Trans. Am. Inst. M.E.*, Feb. 1897.

§§ Coining value of fine silver.

‖‖ R. P. Rothwell, "*The Mineral Industry*," Vol. VII. *for 1898*, New York, 1899, p. 570.

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Congo Free State.*

No mines have as yet been worked by Europeans ; but the natives of the Upper Congo dig a little iron ore and copper ore, and extract the metals for the purpose of making weapons, tools and utensils.

Corea.

Corea appears to be rich in minerals, especially in the province of Ping-Yang, where coal and gold are being worked. Large deposits of smokeless coal exist in the country.†

According to a consular report,‡ 1,200 Coreans are now being employed at the gold mines of an American Company in this province. The output of precious metal in Corea was formerly estimated to be worth £600,000 annually ; but the modern stamp mills introduced by American and other companies will probably bring about a largely increased production.

Costa Rica.§

Mining for gold in Costa Rica has hitherto met with so little success that the industry is practically at a standstill. There is no doubt about the existence of auriferous veins, and it is thought that the cyanide process will now enable the precious metal to be extracted with profit.

Cuba.‖

The following minerals have been more or less constantly mined in Cuba :—

Asphalt and *Petroleum.*—There are large deposits in several places.

Clay.—Clay fit for making bricks and tiles is abundant.

Copper ore.—Copper ore has been mined on an extensive scale, particularly at Cobre, in the province of Santiago de Cuba. It occurs in many places in the eastern part of the island.

Gold.—This metal is said to abound in the provinces of Santa Clara and Santiago.

Iron ore.—The latter province possesses extensive deposits of iron ore, and the Juragua mines have been successfully worked for some years. The exports in 1896 were 416,410 metric tons.

Limestone.—This rock abounds everywhere.

Manganese ore.—This ore is extremely abundant in the province of Santiago. The rich deposits are likely to be utilized in the near future.

Curaçao. (*See* Dutch West Indies.)

Denmark.¶

Chalk and calcareous marl are quarried near Aalborg. The annual output is from 12,000 to 15,000 tons.

Bog iron ore exists in Jutland,** and in years gone by it was occasionally worked and smelted on a small scale.

* Information furnished by the Département des Finances ,Brussels.
† *Eng. Min. Jour.*, Vol. LXVII., 1899, p. 676.
‡ Jordan, "Trade of Corea for the year 1898." *Dipl. and Cons. Reports*, No. 2,304, Ann. Series, 1899 [C. 9044-130], p. 7.
§ Consul Harrison, "Report for the year 1896 on the Trade and Commerce of Costa Rica." *Dipl. and Cons. Reports*, No. 1,913, Ann. Series, 1897 [C. 8277-131].
‖ Day, "Mineral Resources of the Antilles, Hawaii, and the Philippines." *Eng. Mag.*, Vol. XVII., 1899, p. 242.
¶ Consul Boyle, "Trade and Agriculture of Denmark for the year 1898." *Dipl. and Cons. Reports*, No. 2,141, Ann. Series, 1898 [C. 9044-127].
** *Glückauf*, Vol. XXXIV. 1898, p. 872.

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DENMARK—*continued.*

GREENLAND.*

The quantity of cryolite obtained from Ivigtut during the year 1897 was 13,150 tons, and in 1898 only 8,150 tons, the falling off in the latter year being due to the state of the ice.

During the summer months 134 persons were employed in 1897, and 148 in 1898. These numbers were reduced during each winter by about 60 men.

No accidents occurred during the years 1897 or 1898.

Dutch East Indies.

BANCA.†

The alluvial diggings of the Island of Banca still yield large quantities of tin ore.

TABLE 399.

Year.	Persons Employed.	Quantity of Metallic Tin produced.	
		Pikols.	Metric Tons.
1896-97	11,400	148,122	9,111
1897-98	10,830	163,542	10,060
1898-99	—	192,972	11,870

The number of persons employed includes not only the actual diggers of the ore, but also the charcoal burners and the smelters.

BILLITON.†

Like Banca, its neighbour Billiton is a large producer of tin ore.

TABLE 400.

Year.	Number of Mines at Work.	Average Number of Persons Employed.	Quantity of Metallic Tin produced.	
			Pikols.	Metric Tons.
1896-97	85	8,150	92,449	5,687
1897-98	85	7,611	87,825	5,402

* Official Report furnished by the Danish Government.

† Official Return furnished by the Colonial Department of the Dutch Government.

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DUTCH EAST INDIES—*continued.*

BORNEO.*

Coal.—The mines of Mahakkam River at Kutei in South-Eastern Borneo produced 15,400 tons of coal in 1896 and 20,000 in 1897. Small quantities of coal were raised at Salimbau in Western Borneo, only 340 tons in 1896 and 300 tons in 1897.

Diamonds.—The estimated output of diamonds from Western Borneo was 2,500 carats in 1895 and 2,704 carats in 1894.

Gold.—The output of gold from the Western Division of Borneo was 1,784$\frac{11}{16}$ thail, or 96 kilograms, valued at fl. 108,408 in 1896, and 1,820$\frac{1}{2}$ thail, or 98 kilograms, valued at fl. 110,595 in 1897, and in the various other divisions the total output was 2,059$\frac{1}{2}$ thail, or 79 kilograms, valued at fl. 28,247.

CELEBES.*

Gold is known to occur in various parts of Celebes, and several companies have lately been formed in Amsterdam for the purpose of exploring and working the deposits of the precious metal. The Soemalata Mining Co. obtained 140 tons of ore in 1896 and 247 tons in 1897, and the Pulehleh Mining Co. obtained 1,520 tons of ore in 1896–97.

JAVA.†

Among the mineral productions of Java may be named coal, gold, iodine, manganese ore, and petroleum.

Coal.—798 tons of coal were produced from a mine in the Sedan district during the year 1895–96.

Gold.—The natives, especially the women, obtain some gold by washing river sand in wooden bowls. Several gold mining companies have been started with European capital, and rich gold ore is being exported to Liverpool.

Iodine.—The Goenoeng Kendeng district has springs containing iodides in solution, from which 2,525 kil. of crude iodide of copper were manufactured in 1896, and 2,762 kil. in 1897.

Manganese.—Manganese ore is produced in the regencies of Pengasih and Nanggoelan. The output was 3,000 tons in 1896 and 5,200 tons in 1897.

Petroleum.—Petroleum occurs in various parts of the island, and is obtained on a large scale by borings. The output of the wells at Wonokromo and Blora increased from 1,201,000 cases (1 case = 37·8 litres) in 1896 to 1,513,242 cases in 1898.

SINGKEP.*

The small tin-producing island of Singkep forms a sort of connecting link between Banca and the Malay Peninsula.

TABLE 401.

Year.	Number of Mines at Work.	Number of Persons Employed.	Quantity of Metallic Tin produced.	
			Pikols.	Metric Tons.
1896–97	12	1,837	12,108	745
1897–98	12	1,658	11,139	685

About two-thirds of the persons were engaged at the tin diggings proper, and one-third in getting charcoal and smelting the ore.

* Official Return furnished by the Colonial Department of the Dutch Government.
† Acting Consul McLachlan, "Trade of Java for the Year 1898." *Dipl. and Cons. Reports*, No. 2,253, Ann. Series, 1899 [C. 9044-79].

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DUTCH EAST INDIES—*continued.*

SUMATRA.*

Although coal and petroleum are the most important minerals produced in the island at the present time, it has lately been discovered that Sumatra contains payable deposits of gold, and a stamp mill and cyanide plant are now being erected at Redjang Labong in the southern end of the island.

Sumatra's principal petroleum wells are on the east coast at Langkat; they yielded 1,851,512 cases (1 case = 37·8 litres) of refined petroleum in 1896, and 4,564,987 in 1897. The oil is exported to the Straits Settlements, Burmah, Siam, Cochin China, and elsewhere.

TABLE 402.

NUMBER of PERSONS EMPLOYED and QUANTITY of COAL PRODUCED at COAL MINES in 1897 and 1898.

Year.	Number of Persons Employed.	Quantity of Coal produced.
		Metric Tons.
1897	1,874	142,850
1898	1,996	149,434

Dutch Guiana or Surinam.

The estimated quantity of gold produced in 1898 was 865 kilograms,† valued at £98,771.‡ It was obtained almost exclusively from alluvial deposits.

Dutch West Indies.§

ARUBA.

Gold mining has been carried on for many years by an English company.

Phosphate of lime was quarried with great profit between the years 1884 and 1892; in spite of lower prices the deposits are still being worked, and the quantity exported last year was 12,551 metric tons, of which Great Britain took 6,409 metric tons and Germany 4,709 metric tons.

BONAIRE AND ST. MARTIN.

Salt is obtained by the natural evaporation of sea water at both these islands. In 1897 the export of salt from Bonaire was 30,059 barrels, valued at 18,035 florins or £1,503, and from St. Martin 364 barrels, valued at 258 florins or £21.

CURAÇOA.

The phosphate of lime mines in this island have been at a standstill since 1895. The amount of bay salt produced does not appear to be known exactly.

* Official Return furnished by the Colonial Department of the Dutch Government: and Truscott. "The Position of Gold Mining in the Dutch East Indies." *Min. Jour.*, Vol. LXIX., 1899, p 925.
† Official Return furnished by Colonial Department of the Dutch Government.
‡ Export value.
§ Consul Jesurun, "Trade of Curaçoa and Dependencies for the year 1898." *Dipl. and Cons. Reports*, No. 2,244, Ann. Series, 1899 [C. 9044-70].

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Ecuador.*

It is said that gold abounds, though the yearly output is small. It is obtained mainly from alluvial deposits, but the auriferous veins are being tested on a commercial scale.

TABLE 403.

ESTIMATED QUANTITY and VALUE of GOLD and SILVER produced in 1897.

1897.			
Gold.		Fine Silver.	
Quantity.	Value.	Quantity.	Coining Value.
Kilos. 200	£ 27,289	Kilos. 240	£ 2,053

Egypt.

Little or nothing is being done in the way of mining at the present day. Granite, porphyry, and limestone are quarried.

Salt.†—The natural evaporation of the waters of Lake Mareotis leaves a considerable quantity of salt, and this source of supply is likely to be largely utilized in the near future.

Soda.†—It is now stated that Wady Natron, well known to the ancients, is capable of supplying the natural carbonate of soda at lower prices than are paid for the artificial product. If this proves to be the case, a large output of natural soda is expected. The mineral is found: (1) dissolved in the water of certain lakes; (2) in the form of a crust lying on the surface of the water, or falling to the bottom; (3) as an efflorescence in marshes adjoining the lakes.

SOUDAN.‡

The possible mineral wealth of the Soudan is practically unknown. Gold mines were once worked in the mountains south of Fazogl. Iron ore is found in Bahr Ghazal Province and also in Darfur.

Formosa.§

The Island of Formosa contains deposits of coal, gold, sulphur, and petroleum.

Coal is mined near Kelung on a small scale, and a few thousand tons are exported annually. It is said that the Japanese are extracting large quantities of gold.

* Consul Söderström, "Trade of Quito for the year 1897." *Dipl and Cons. Reports*, No. 2,101, Ann. Ser., 1898 [C. 8648–123].—Consul Chambers, "Trade of Quayaquil for the year 1898." *Dipl. and Cons Reports*, No. 2,246, Ann. Ser., 1899 [C. 9044–72].—*Report of the Director of the United States Mint for 1898.*

† *Prospectus of the Egyptian Salt and Soda Company, Ltd.*, 6th November 1899.

‡ Despatch from H.M. Agent and Consul-General at Cairo, enclosing a Report on the Soudan by Sir W. Garston, K.C.M.G.—Egypt, No. 5 (1899) [C. 9332].

§ *Mining Journal*, Vol. LXIX., 1899 p. 1024, and *Engineering*, Vol. LXVIII., 1899, p. 337.

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France.

Coal.—Coal mining is by far the most important mineral industry in France, for its collieries employ more persons than all the other mines and quarries put together. 65 per cent. of the coal obtained in France during the year 1898 was produced in the two departments of the Nord and the Pas-de-Calais. The mines of the important Anzin Company near Valenciennes yielded 3,168,000 tons, or 197,000 tons more than in the previous year, whilst the output of the Lens Company's collieries in the Pas-de-Calais reached 2,977,148 tons, or 279,000 tons more than in 1897.

The total quantity of brown coal produced during the year 1898 amounted to 529,977 tons, or an increase of 69,000 tons. The quantity of peat obtained in 1898 was less than in the previous year.

Iron ore.—92 per cent. of the iron ore raised in France is oolitic hydrated peroxide, which is principally obtained from mines and openworks near Nancy, Longwy, and Briey, in the department of Meurthe-et-Moselle. The iron-producing strata are at the top of the Liassic rocks, and are of the same geological age as those which are so largely worked in the adjoining territories of Lorraine and Luxemburg.

Iron pyrites.—Nearly all the iron pyrites is the produce of the Sain-Bel mines (Rhône).

Lead ore.—The principal lead mine is at Pontpéan in Brittany.

Manganese ore.—Carbonate of manganese is worked on a large scale at Las Cabesses mine (Ariège), and pyrolusite at the Romanèche and Grand-Filon mines (Saône-et-Loire).

Salt.—Much of the salt comes from a thick bed of rock salt in the Upper Trias in the department of Meurthe-et-Moselle. The bay-salt is the result of the evaporation of sea-water in marshes on the shores of the Atlantic and the Mediterranean.

Zinc ore.—The two largest workings for zinc are those of Malines (Gard) and Bormettes (Var).

TABLE 404.

PERSONS EMPLOYED at MINES, classified according to Ages, during the Years 1897 and 1898.

1897.*

Kind of Mines.	Under-ground.				Above-ground.					Total. Under-ground and Above-ground.
	Males under 16.	Males 16–18.	Males above 18.	Total.	Children under 16.	Young Persons 16–18.	Females above 18.	Males above 18.	Total.	
Anthracite, brown coal, and coal.	5,048	6,215	90,430	101,693	4,565	2,535	4,949	29,659	41,708	143,401
Other mines	67	194	9,259	9,520	177	218	257	2,931	3,583	13,103
Total	5,115	6,409	99,689	111,213	4,742	2,753	5,206	32,590	45,291	156,504

* *Statistique de l'Industrie Minérale en France et en Algérie, pour l'année 1897*, p. 38.

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FRANCE—*continued.*

PERSONS EMPLOYED at MINES, classified according to Ages, during the Years 1897 and 1898—*continued.*

1898.*

Kind of Mines.	Under-ground.				Above-ground.					Total Under-ground and Above-ground.
	Males under 16.	Males 16–18.	Males above 18.	Total.	Children under 16.	Young Persons 16–18.	Females above 18.	Males above 18.	Total.	
Anthracite, brown coal, and coal.	5,446	6,555	93,394	105,395	4,675	2,580	5,489	30,487	43,231	148,626
Other mines	60	195	9,223	9,478	214	217	286	3,280	3,997	13,475
Total	5,506	6,750	102,617	114,873	4,889	2,797	5,775	33,767	47,228	162,101

TABLE 405.

PERSONS EMPLOYED at QUARRIES during the Years 1897 and 1898.†

Kind of Quarries.	1897.			1898.		
	Under-ground.	Above-ground.	Total.	Under-ground.	Above-ground.	Total.
Underground	13,490	8,577	22,067	13,694	8,874	22,568
Open	—	107,776	107,776	—	108,152	108,152
Total	13,490	116,353	129,843	13,694	117,026	130,720

TABLE 406.

QUANTITY and VALUE of the MINERALS raised from MINES and WORKINGS other than QUARRIES during the Years 1897 and 1898.‡

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Francs.	Metric Tons.	Francs.
Alum	—	—	—	—
Anthracite	1,628,000	—§	1,654,000	—§
Antimony ore	4,685	324,574	4,433	325,228
Arsenic	—	—	1,552	108,759
Bituminous shale, limestone, &c. ...	233,328	1,699,492	229,108	1,669,438
Brown coal	460,422	3,907,585	529,977	4,646,498
Coal	28,709,207	330,100,854‖	30,172,127	358,506,919‖
Copper ore	956	18,224	382	14,205
Gold quartz	—	—	30	1,200
Iron ore	4,582,236	15,040,138	4,731,394	16,037,133
Iron pyrites	303,448	3,763,290	310,972	3,926,210
Lead ore, argentiferous	21,212	2,781,303	23,342	3,201,132
Manganese ore	37,212	1,040,176	31,935	831,055
Peat	98,067	1,269,257	104,265	1,507,431
Salt: Rock salt and salt from brine	320,834	5,323,331	303,784	4,371,108
Salt: Salt contained in brine used for making soda ...	286,587	1,487,387	245,505	1,473,030
Salt: Salt from sea water	340,582	4,388,400	449,994	4,731,461
Sulphur-bearing limestone	10,723	156,260	9,818	135,704
Zinc ore	83,044	6,525,014	85,550	7,377,905
Total value in Francs ...	—	377,825,285	—	408,864,416
„ £ sterling ...	—	£15,113,011	—	£16,354,577

* *Statistique de l'Industrie Minérale en France et en Algérie, pour l'année 1898*, p. 39.
† *Ibid.*, *1897*, p. 72 ; *1898*, p. 74.
‡ *Ibid.*, *1897*, p. 37 ; *1898*, p. 38.
§ Value included with coal.
‖ Including value of anthracite.

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FRANCE—*continued.*

TABLE 407.

QUANTITY and VALUE of MINERALS raised from QUARRIES in 1897 and 1898.*

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Francs.	Metric Tons.	Francs.
Aluminous earth	465	5,910	375	4,301
Asbestos	55	41,250	38	26,600
Barytes	3,209	43,680	2,763	36,690
Bauxite	41,740	276,055	36,723	335,667
Cement	976,813	23,582,357	1,072,025	26,798,102
Chalk	36,597	545,667	50,115	742,140
Clay — China clay	70,713	1,336,113	68,412	1,207,396
Clay — Fireclay	318,185	1,667,141	295,913	1,742,659
Clay — Potter's clay	4,953,617	6,069,751	5,125,439	6,167,728
Clay — Stucco	306	16,147	225	11,873
Flagstone	66,648	1,445,064	66,482	1,413,599
Fluor spar	2,722	40,802	3,077	46,155
Fuller's earth	4,000	17,400	3,850	16,747
Gypsum — Plaster	1,382,269	12,525,685	1,462,304	13,191,070
Gypsum — Manure	292,753	1,324,226	290,611	1,201,761
Lignite (Pyritiferous)	26,942	123,379	19,545	87,952
Lime	4,221,580	36,993,244	4,325,495	38,527,123
Lithographic stone	210	123,750	211	123,013
Magnesium carbonate	30	1,500	30	1,500
Marble	118,675	4,635,668	124,161	4,969,154
Marl	1,268,013	1,556,299	1,217,861	1,475,109
Millstones	32,175	1,220,414	38,929	3,636,173
Ochre	32,299	780,901	33,780	790,060
Onyx	54	3,000	54	3,000
Paving stone	568,677	9,590,524	568,483	9,493,389
Phosphate of lime	535,390	14,264,433	568,558	15,579,787
Sand, gravel, and flint	5,018,247	8,100,902	4,953,217	8,020,547
Slate — Roofing	341,887	18,207,938	330,309	20,674,143
Slate — Slabs	1,143	156,410	1,318	192,760
Steatite, talc, and asbestos	10,629	214,047	9,955	191,615
Stone for building	10,105,438	46,775,514	9,989,416	49,453,685
„ (broken for ballast)	11,477,817	24,192,806	11,915,093	25,206,263
„ for mosaic work	2,500	62,500	2,500	62,500
Whetstones	1,908	318,319	1,899	311,315
Total value in Francs ...	—	216,258,796	—	231,741,576
„ £ sterling ...	—	£8,650,352	—	£9,269,663

TABLE 408.

DEATHS from ACCIDENTS at MINES during the Years 1897 and 1898.†

Kind of Miner.	1897.						1898.					
	Number of Deaths from Accidents.			Death-rates from Accidents per 1,000 Persons Employed.			Number of Deaths from Accidents.			Death-rates from Accidents per 1,000 Persons Employed.		
	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.
Anthracite, brown coal, and coal.	136	17	153	1·34	·41	1·07	133	26	159	1·26	·60	1·07
Other mines ..	24	3	27	2·52	·84	2·06	29	8	37	3·06	2·00	2·75
Totals	160	20	180	1·44	·44	1·1	162	34	196	1·41	·72	1·21

* *Statistique de l'Industrie Minérale en France et en Algérie, pour l'année 1897*, p. 58; *1898*, p. 61.
† *Ibid.*, *1897*, p. 72; *1898*, p. 74.

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FRANCE—*continued.*

TABLE 409.

DEATHS from ACCIDENTS at QUARRIES during the Years 1897 and 1898.*

Kind of Quarries.	1897.						1898.					
	Number of Deaths from Accidents.			Death-rates from Accidents per 1,000 Persons Employed.			Number of Deaths from Accidents.			Death-rates from Accidents per 1,000 Persons Employed.		
	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.	Below-ground.	Above-ground.	Total.
Underground ..	49	1	50	3·57	·12	2·24	44	2	46	3·21	·23	2·04
Open	—	99	99	—	·91	·91	—	100	100	—	·91	·91
Total	49	100	149	3·57	·84	1·13	44	102	146	3·21	·87	1·12

French Guiana.†

TABLE 410.

QUANTITY of GOLD produced in 1897 and 1898.

1897.		1898.	
Gold.		Gold.	
Quantity.	Value.	Quantity.	Value.
Kilos. 2,311	Francs ... 6,300,000 £ sterling 252,000	Kilos. 2,321	Francs ... 6,388,000 £ sterling 255,520

Like the other Guianas, the French Colony is auriferous, and it is probable that its resources as a gold-producing country are to a great extent undeveloped.

The little island called Grand-Connétable is said to be entirely composed of phosphate of lime; 6,605 tons were raised in 1894; no later figures are available.

French Possessions (*See* ALGERIA, FRENCH GUIANA, INDO-CHINA, NEW CALEDONIA, SENEGAL, and TUNIS).

* *Statistique de l'Industrie Minérale en France et en Algérie pour l'année, 1897*, p. 72; and *1898*, p. 74.

† *Statistique de l'Industrie Minérale en France et en Algérie, pour l'année, 1897*, p. 80; *et pour l'année, 1898*, p. 86.

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German East Africa.*

Coal, gold, iron ore, garnets, mica, and salt are known to exist in the Protectorate.

A rich deposit of coal has been discovered* close to the north end of Lake Nyassa, and it will be of importance for the steamship service.

Gold-bearing quartz occurs in the province of Usambara, but it is too poor to pay for working.

Bornhardt† considers that some deposits of garnets and mica promise good results.

German Empire.

The importance of the mining industry of the German empire is apparent from the following tables, which show that in 1898 its mines employed 491,692 persons, and produced nearly 128 million tons of coal, and 10½ million tons of iron ore, besides other minerals, with a total value of more than 46 millions sterling.

Amber.—For many years the amber trade has been almost entirely in the hands of the firm of Stantien & Becker of Königsberg. Difficulties having arisen between this firm and some of the smaller traders, the Prussian Government have cut the gordian knot by purchasing Messrs. Stantien & Becker's mines and factories, which will now be carried on as a State undertaking, like its numerous collieries and its mines of potassium salts. The magnitude of the firm's operations will be gathered from the fact that nearly half a million sterling was voted by the Government to defray the purchase.

Coal.—Deposits of brown coal are found in more or less abundance over nearly the whole of North Germany; the principal workings are in the provinces of Brandenburg and Saxony.

There are three principal coal-mining districts in Prussia: (1) The Lower Rhine and Westphalian Basin, which is by far the most important; (2) Silesia, and especially Upper Silesia; (3) the Rhenish district in the neighbourhood of Saarbrücken and Aix-la-Chapelle. Most of the coal is derived from seams of true Carboniferous age; near Hanover there are extensive workings in the Wealden beds.

Copper.—The bulk of the copper is obtained by the large and important Mansfeld Company from a thin bed of cupriferous shale, which at the same time is silver-bearing.

Iron Ore.—Veins in the Siegen district and in the Duchy of Nassau yield spathose ore, brown iron ore, and hæmatite rich in manganese. These sources of supply are, however, of far less importance than the stratified ore of Jurassic age in Luxemburg and Lorraine. Indeed, the iron field upon the confines of France and Germany is at the present moment the greatest ore-producer of Europe. It is estimated that Luxemburg possesses 14 sq. m. (37 sq. km.), Germany 160 sq. m. (414 sq. km.), and France 208 sq. m. (540 sq. km.) of iron territory, in which ore can be raised at a profit. The so-called "iron ore formation" consists of five main beds of oolitic iron ore interstratified with marl and limestone, with an average thickness of 105 ft. (32 m.), of which rather more than one-half is available iron ore. The ore contains on an average 36 per cent. of iron and 1·7 per cent. of phosphoric acid.‡

Lead Ore.—The lead ore comes chiefly from Upper Silesia, the Hartz, and Rhenish Prussia.

Salts.—Kainite and other potassium salts are mined in the province of Prussian Saxony and the Duchy of Anhalt; of late years Hanover has had a share in the production of these important and not very widely spread minerals, and a mine in Brunswick added to the yield in 1897. Common salt and potassium chloride are likewise obtained in considerable quantities by evaporation of solutions pumped up from boreholes.

Zinc Ore.—Upper Silesia is the mainstay of the German zinc industry.

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* "Ueber die Kohlengewinnung im nördlichen Nyassagebiet." *Glückauf*, Vol. XXXIV., 1898, p. 906; and Sir F Lascelles, "Report on the German Colonies in Africa," No. 432, Misc. Ser. [C. 8640–3]. 1897. pp. 4 and 17.

† Bornhardt, "Ueber die bergmännischen und geologischen Ergebnisse seiner Reisen in Deutsch-Ostafrika." *Zeitschr. d. D. geol. Ges.*, Vol. L., Berlin, 1899, and *Zeitschr f. prakt. Geologie*, 1899, p. 217.

‡ Hoffmann, "Das Vorkommen der oolithischen Eisenerze (Minette) in Luxemburg und Lothringen." *Glückauf*. Vol. XXXV., 1899, p. 640.

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GERMAN EMPIRE—*continued.*

TABLE 411.

PERSONS EMPLOYED at the MINES of the GERMAN EMPIRE.

Mineral.	1897.*				1898.†			
	Under-ground.	Above-ground.		Total Under and Above Ground.	Under-ground.	Above-ground.		Total Under and Above Ground.
		Males.	Females.			Males.	Females.	
I.—Coals and Asphalt.								
Asphalt	94	152	—	246	107	133	—	240
Brown coal	17,355	21,694	1,008	40,057	20,046	21,675	1,091	42,812
Coal	256,992	74,601	4,581	336,174	274,445	78,626	4,624	357,695
Graphite	115	118	—	233	144	72	—	216
Petroleum	—	432	—	432	—	441	—	441
Total	274,556	96,997	5,589	377,142	294,742	100,947	5,715	401,404
II.—Salts.								
Boracite	—	—	—	—	—	—	—	—
Kainite	908	1,030	—	1,938	1,232	1,140	3	2,375
Magnesium salts	—	—	—	—	—	—	—	—
Potassium salts other than kainite	4,329	2,308	5	6,642	4,660	2,444	3	7,107
Rock salt	561	335	9	905	501	347	9	857
Total	5,798	3,673	14	9,485	6,393	3,931	15	10,339
III.—Ores.								
Arsenic ore	181	199	—	380	190	198	—	388
Cobalt, nickel, and bismuth ores	477	148	13	638	455	156	21	632
Copper ore	11,303	3,116	1	14,420	11,359	3,093	2	14,454
Iron ore	22,771	8,275	1,283	32,329	22,534	8,872	1,266	32,672
Iron pyrites	318	203	—	521	336	183	—	519
Lead ore	7,199	4,773	413	12,385	7,758	4,860	390	13,008
Manganese ore	265	90	7	362	299	81	4	384
Silver and gold ores	2,809	1,235	1	4,045	2,674	970	1	3,645
Tin ore	15	29	—	44	13	29	—	42
Uranium and tungsten ores	20	21	—	41	30	27	—	57
Zinc ore	7,732	3,833	2,184	13,749	7,907	3,962	2,278	14,147
Other ores	—	—	—	—	1	—	—	1
Total	53,090	21,922	3,902	78,914	53,556	22,431	3,962	79,949
Total for the German Empire	333,444	122,592	9,505	465,541	354,691	127,309	9,692	491,692
Grand Duchy of Luxemburg—iron ore	3,281	2,381	—	5,662	3,268	2,380	—	5,648

* *Vierteljahrshefte zur Statistik des Deutschen Reichs*; Jahrgang, 1898, Berlin, IV. Heft.
† *Ibid.*, 1899.

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GERMAN EMPIRE—*continued.*

TABLE 412.

PERSONS EMPLOYED at WELLS producing BRINE or other MINERAL SOLUTIONS during the Years 1897 and 1898.

Mineral Solution.	1897.*			1898.†		
	Men.	Women.	Total.	Men.	Women.	Total
Sodium chloride	3,323	13	3,336	3,427	13	3,440
Potassium chloride	2,353	18	2,371	2,747	22	2,769
Sulphates or chlorides of sodium, potassium, magnesium, or aluminium.	649	10	659	656	12	668
Total	6,325	41	6,366	6,830	47	6,877

TABLE 413.

QUANTITY and VALUE of MINERALS produced from MINES in the GERMAN EMPIRE during the Years 1897 and 1898.

Mineral.	1897.*		1898.†	
	Quantity produced.	Value of the Mineral reckoned at the Mines.	Quantity produced.	Value of the Mineral reckoned at the Mines.
I.—COALS, ASPHALT, &c.	Metric Tons.	Marks.	Metric Tons.	Marks.
Amber	(Not stated.)	—	(Not stated.)	—
Asphalt	61,645	378,534	67,649	416,338
Brown coal	29,419,503	66,250,567	31,648,498	73,359,476
Coal	91,054,982	648,938,742	96,279,992	710,256,973
Graphite	3,861	264 504	4,593	391,664
Petroleum	23,303	1,396,444	25,789	1,578,208
Total value	—	717,228,791	—	786,002,659
II.—SALTS.				
Boracite	198	40,887	230	42,985
Kainite	992,389	13,944,029	1,103,643	15,343,4:5
Magnesium salts	2,601	22,546	2,444	21,108
Potassium salts, other than kainite ...	953,798	12,120,574	1,105,212	14,306,511
Rock salt	763,412	3,217,191	804,658	3,354,623
Total value	—	29,345,227	—	33,068,652
III.—ORES.				
Arsenic ore	3,777	224,085	3,540	209,658
Cobalt, nickel, and bismuth ores ...	3,355	559,108	3,157	554,179
Copper ore	700,619	19,010,207	702,781	19,684,607
Iron ore	10,116,970	48,903,250	10,544,295	49,661,288
Iron pyrites	133,302	964,467	136,849	970,354
Lead ore	150,179	13,015,537	151,601	13,648,513

* *Vierteljahrshefte zur Statistik des Deutschen Reichs;* Jahrgang, 1898, Berlin, IV. Heft.
† *Ibid.*, 1899.

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GERMAN EMPIRE—*continued.*

QUANTITY and VALUE of MINERALS produced from MINES in the GERMAN EMPIRE during the Years 1897 and 1898—*continued.*

Mineral.	1897.		1898.	
	Quantity produced.	Value of the Mineral reckoned at the Mines.	Quantity produced.	Value of the Mineral reckoned at the Mines.
III.—ORES—*cont.*	Metric Tons.	Marks.	Metric Tons.	Marks.
Manganese ore	46,427	461,423	43,354	447,145
Silver and gold ores	9,708	1,453,084	12,413	1,346,627
Tin ore	55	23,926	51	14,202
Uranium and tungsten ores	38	33,468	50	46,110
Vitriol and alum ores, other than iron pyrites.	225	1,351	188	1,128
Zinc ore	663,850	16,881,357	641,706	22,047,276
Total value	—	101,531,263	—	108,631,087
Total value for the German Empire in marks.	—	848,105,281	—	927,702,398
Total value for the German Empire in £ sterling.	—	£42,405,264	—	£46,385,120
Grand Duchy of Luxemburg—iron ore	5,349,010	11,184,440	5,348,951	11,147,349

TABLE 414.

QUANTITY and VALUE of MINERALS produced from BRINE, &c. WELLS during the Years 1897 and 1898.

Mineral Solution.	1897.*		1898.†	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Marks.	Metric Tons.	Marks.
1. Alkaline sulphates :—				
(*a.*) Potassium sulphate... ...	13,774	2,262,882	18,853	3,053,588
(*b.*) Potassium and magnesium sulphate.	7,812	596,315	13,982	1,037,939
(*c.*) Sodium sulphate	68,822	1,736,791	69,111	1,810,037
2. Earthy sulphates :—				
(*a.*) Aluminium sulphate ...	37,053	2,454,737	35,366	2,259,808
(*b.*) Alum...	2,995	295,353	4,069	364,344
3. Magnesium chloride	18,014	257,175	19,819	387,893
4. Magnesium sulphate	35,072	622,338	30,295	490,669
5. Potassium chloride	165,001	23,057,692	191,347	25,540,882
6. Salt (sodium chloride)	543,272	12,136,514	565,683	12,464,350
Total value in marks	—	43,419,797	—	47,409,510
„ „ £ sterling ...	—	£2,170,989	—	£2,370,475

The following tables give the output and value of some of the more important minerals, classified according to the States in which they were produced.

* *Vierteljahrshefte zur Statistik des Deutschen Reichs*; Jahrgang, 1898, Berlin, IV Heft.
† *Ibid.*, 1899.

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GERMAN EMPIRE—*continued.*

TABLE 415.

Brown Coal.

State.	1897.*		1898.†	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Marks.	Metric Tons.	Marks.
Anhalt	1,219,704	3,389,956	1,332,844	3,734,059
Bavaria	41,098	104,383	51,818	182,309
Brunswick	1,057,192	3,170,991	1,053,710	3,160,970
Hesse	220,923	550,716	218,384	600,292
Prussia	24,222,911	53,296.979	26,035,415	59,106,839
Saxe Altenburg	1,535,876	2,927,678	1,701,129	3,451,004
Saxony	1,073,239	2,665,433	1,180,927	2,912,688
Other German States	48,560	144,431	74,271	211,315
Total value in marks	29,419,503	66,250,567	31,648,498	73,359,476
„ „ £ sterling ...		£3,312,528		£3,667,974

TABLE 416.

Coal.

State.	1897.*		1898.†	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Marks.	Metric Tons.	Marks.
Alsace-Lorraine	1,057,544	8,839,438	1,074,150	9,092,700
Bavaria	1,007,403	9,636,829	1,057,865	10,377,818
Prussia	84,253,393	582,660,597	89,573,528	641,861,342
Saxony	4,571,685	46,252,857	4,406,795	47,340,302
Other German States	164,957	1,549,021	167,654	1,584,811
Total value in marks	91,054,982	648,938,742	96,279,992	710,256,973
„ „ £ sterling ...		£32,446,937		£35,512,849

TABLE 417.

Rock Salt.

State.	1897.*		1898.†	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Marks.	Metric Tons.	Marks.
Prussia	310,754	1,474,787	326,825	1,474,160
Würtemburg	233,242	867,226	243,359	870,637
Other German States	219,416	915,178	234,474	1,009,826
Total value in marks... ...	763,412	3,217,191	804,658	3,354,623
„ „ £ sterling ...		£160,859		£167,731

* *Vierteljahrshefte zur Statistik des Deutschen Reichs*; Jahrgang, 1898, Berlin, IV. Heft.
† *Ibid.*, 1899.

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GERMAN EMPIRE—*continued.*

TABLE 418.

Iron Ore.

State.	1897.* Quantity.	1897.* Value.	1898.† Quantity.	1898.† Value.
	Metric Tons.	Marks.	Metric Tons.	Marks.
Alsace-Lorraine	5,360,840	12,317,594	5,949,777	14,420,049
Bavaria	175,305	726,718	175,023	755,737
Brunswick	108,502	215,799	117,347	235,011
Hesse	205,476	1,580,353	159,430	1,224,593
Prussia	4,183,536	33,731,064	4,018,731	32,538,555
Waldeck...	31,097	126,471	31,488	127,906
Other German States	52,213	205,251	92,499	359,437
Total value in marks... ...	10,116,969	48,903,250	10,544,295	49,661,288
„ „ £ sterling ...		£2,445,162		£2,483,064
Grand Duchy of Luxemburg ...	5,349,010	11,184,440	5,348,951	11,147,349
		£559,222		£557,367

TABLE 419.

Silver and Gold Ores.

	1897.* Quantity.	1897.* Value.	1898.† Quantity.	1898.† Value.
	Metric Tons.	Marks.	Metric Tons.	Marks.
Saxony	9,702	1,433,478	12,370	1,335,163
Other German States	6	19,606	43	11,464
Total value in marks... ...	9,708	1,453,084	(a) 12,413	1,346,627
„ „ £ sterling ...		£72,654		£67,331

(a) 2,847 kilos. of fine gold and 480,578 kilos. of fine silver were extracted at the Metallurgical Works in 1898.

According to a return of the Miners' Sick and Accident Clubs for 1898‡, the deaths from accidents among persons employed in and about mines in the German Empire have been as follows :—

TABLE 420.

DEATHS from ACCIDENTS at MINES and other MINERAL WORKINGS in GERMANY.

Year.	Deaths.	Death-rate per 1,000 Persons Employed.§	Year.	Deaths.	Death-rate per 1,000 Persons Employed.§
1886	864	2·51	1893	956	2·27
1887	816	2·35	1894	814	1·91
1888	791	2·21	1895	932	2·16
1889	866	2·31	1896	987	2·21
1890	871	2·19	1897	961	2·05
1891	1,026	2·44	1898	1,253	2·53
1892	869	2·05			

* *Vierteljahrshefte zur Statistik des Deutschen Reichs*; Jahrgang, 1898, Berlin, IV., Heft.
† *Ibid.*, 1899.
‡ *Vierzehnter Bericht über die Verwaltung der Knappschafts-Berufsgenossenschaft für das Jahr 1898*, Berlin.
§ The number of deaths is liable to slight alterations every year in consequence of persons dying after a time from injuries originally classed as non-fatal.

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GERMAN EMPIRE—*continued.*

TABLE 421.

DEATHS from ACCIDENTS at MINES and other MINERAL WORKINGS during the Year 1898.*

Kind of Workings.	Average Number of Persons Insured.	Number of Deaths from Accidents.			Death-rate per 1,000 Persons Insured.
		Males.	Females.	Total.	
Brown coal mines	46,179	110	—	110	2·35
Coal mines	350,206	1,037	3	1,040	2·97
Ore mines and smelting works... ...	75,847	68	—	68	·90
Salt mines and brine works	16,038	23	—	23	1·43
Other mineral workings...	6,816	12	—	12	1·76
Total	495,086	1,250	3	1,253	2·53

Separate statistics have been obtained for the following States, forming parts of the German Empire, viz., Bavaria, Prussia, and Saxony.

BAVARIA.†

TABLE 422.

PERSONS EMPLOYED at MINES and other MINERAL WORKINGS during the Years 1897 and 1898.

Kind of Mines or Mineral Workings.	1897.		1898.		Kind of Mines or Mineral Workings.	1897.		1898.	
	Men.	Women and Children.	Men.	Women and Children		Men.	Women and Children.	Men.	Women and Children.
Barytes	47	131	87	152	Ochre, &c.	89	117	92	247
Basalt	620	924	737	1,937	Paving stones ...	271	769	278	905
Brown coal ...	210	561	243	604	Petroleum... ...	13	12	14	6
Cement marl ...	195	5	232	12	Porcelain earth ...	127	129	186	520
Coal	5,792	10,957	6,080	11,367	Salt, rock	103	128	106	144
Copper ore ...	42	21	14	30	,, from brine ...	242	517	279	614
Emery	9	17	9	16	Sand	21‡	41‡	50§	156§
Feldspar	31	86	30	78	Sandstone§ ...	994	2,138	1,049	3,029
Fireclay	578	1,180	507	1,372	Slate (roofing and slabs).	87	213	136	310
Fluorspar ...	37	104	29	97	Steatite	76	250	66	218
Granite§	1,620	3,736	2,948	4,409	Whetstone ...	40	—	24	—
Graphite	233	200	216	320					
Gypsum	69	6	15	4					
Iron ore	698	1,639	738	1,789					
Iron pyrites ...	35	95	40	96					
Limestone ...	491	929	591	1,474					
Manganese ore ...	3	—	1	—	Total ...	12,773	24,905	14,797	29,966

* *Vierzehnter Bericht über die Verwaltung der Knappschafts-Berufsgenossenschaft für das Jahr 1898*, Berlin, pp. 42 and 44.

† Return furnished by the Royal Bavarian Mining Department, Munich.

‡ Not including those employed in Zweibrücken and Bayreuth.

§ Not including those employed in Zweibrücken.

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GERMAN EMPIRE—BAVARIA—*continued.*

TABLE 423.

QUANTITY and VALUE of MINERALS obtained during the Years 1897 and 1898.

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Marks.	Metric Tons.	Marks.
Barytes	3,365	11,624	4,339	25,859
Basalt	265,789	508,057	261,247	525,338
Brown coal	39,044	99,651	38,663	131,369
Cement marl	97,831	242,363	110,757	209,496
Coal	917,022	9,068,343	964,611	9,797,056
Emery	217	9,230	280	8,625
Feldspar	1,689	18,713	1,949	32,212
Fireclay...	144,425	1,201,980	282,994	2,685,860
Fluorspar	4,904	22,976	4,440	20,840
Granite	152,688	1,600,243	156,938	1,855,202
Graphite	3,861	264,504	4,593	391,664
Gypsum...	26,153	54,436	25,688	52,666
Iron ore...	172,699	695,235	171,987	712,520
„ pyrites	2,211	28,321	2,304	29,142
Limestone	224,550	305,539	214,309	315,590
Lithographic stone	13,941	871,282	12,030	721,740
Manganese ore...	130	790	—	—
Melaphyre	245,272	735,816	259,986	779,958
Ochre, &c.	8,673	103,488	8,748	126,947
Paving stones	14,648	229,372	16,720	327,568
Petroleum	—	—	12	1,200
Porcelain earth	24,086	153,381	29,197	141,705
Salt, rock	1,161	22,347	736	16,143
„ *from* brine	41,533	1,552,116	39,717	1,878,515
Sand	31,678	35,248	45,907	69,775
Sandstone	242,112	1,260,470	296,139	1,674,320
Slates (roofing and slabs)	1,496	56,002	3,956	96,157
Steatite	2,464	141,441	1,912	116,773
Whetstone	95	15,200	85	6,700
Total value in Marks	—	19,308,168	—	22,750,940
„ „ £ sterling ...		£965,408		£1,137,547

PRUSSIA.

TABLE 424.

PERSONS EMPLOYED at MINES and other MINERAL WORKINGS during the Years 1897 and 1898.*

Kind of Mines or other Mineral Workings.	Number of Persons Employed.	
	1897.	1898.
Brown coal	33,020	35,135
Coal	303,370	324,351
Ore	64,971	65,491
Other mineral workings	14,277	15,335
Total	415,638	440,312

* *Zeitschr. B. H. S. W.*, Vol. XLVII., p. 45.

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GERMAN EMPIRE.—PRUSSIA—*continued.*

TABLE 425.

QUANTITY and VALUE of MINERALS obtained from MINES during the Years 1897 and 1898.

Mineral.	1897.*			1898.†		
	Number of Mines.	Output.		Number of Mines.	Output.	
		Quantity.	Value.		Quantity.	Value.
I.—*Coals and Asphalt.*		Metric Tons.	Marks.		Metric Tons.	Marks.
Asphalt	3	11,466	74,825	3	12,822	81,610
Brown coal	382	24,222,911	53,296,979	394	26,035,814	59,127,583
Coal	273	84,253,393	582,660,597	273	89,573,528	641,861,342
Petroleum	6	2,600	292,153	6	2,545	282,051
Total	664	108,490,370	636,324,554	676	115,624,709	701,352,586
II.—*Salts.*						
Boracite (pure)	—	185	38,652	—	216	40,650
Kainite	9	716,348	10,117,395	11	744,241	10,243,043
Magnesium salts	—	2,248	19,526	—	2,061	17,873
Potassium salts, other than kainite.	7	640,236	7,594,589	9	718,958	8,644,403
Rock salt	5	310,755	1,434,787	5	329,959	1,508,649
Total	21	1,669,772	19,204,949	25	1,795,435	20,454,618
III.—*Ores.*						
Arsenic ore	3	3,377	202,620	1	3,298	197,880
Cobalt ore	3	121	25,024	2	34	6,800
Copper ore	16	690,338	18,782,718	19	691,867	19,468,210
Gold and silver ore ...	2	6	19,606	2	43	11,464
Iron ore	495	4,183,536	33,731,064	417	4,020,810	32,540,260
Iron pyrites	4	121,766	836,816	4	128,078	881,646
Lead ore	126	133,158	12,491,520	138	133,637	12,872,427
Manganese ore	12	45,254	412,547	12	42,232	386,765
Nickel ore	3	204	6,322	3	79	2,773
Quicksilver ore	—	—	—	1	—	—
Vitriol ores and alum ores, other than iron pyrites.	—	129	772	—	107	645
Zinc ore	43	663,739	16,879,042	56	641,671	22,046,621
Total	707	5,841,628	83,388,051	655	5,661,856	88,415,491
Gross Total	1,392	116,001,770	738,917,554	1,356	123,082,000	810,222,695
Total value in £ sterling	—	—	£36,945,878	—	—	£40,511,135

* *Zeitschr. B. H. S. W.*, Vol. XLVI., p. 20.

† *Zeitschr. B. H. S. W.*, Vol. XLVII., p. 20.

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GERMAN EMPIRE.—PRUSSIA—*continued.*

TABLE 426.

QUANTITY and VALUE of SALTS obtained from BRINE WELLS, &c. during the Years 1897 and 1898.

Description of the Product.	1897.*					1898.†				
	Number of Works during the Year.		Quantity of Rock Salt and other raw Material added to the Solution.	Output.		Number of Works during the Year.		Quantity of Rock Salt and other raw Material added to the Solution.	Output.	
	(*a*) in which the Salt named in the adjacent Column is the Main Product.	(*b*) in which the Salt named in the adjacent Column is a By-product.		Quantity.	Value.	(*a*) in which the Salt named in the adjacent Column is the Main Product.	(*b*) in which the Salt named in the adjacent Column is a By-product.		Quantity.	Value.
1. Alkaline Sulphates:—			Metric Tons.	Metric Tons.	Marks			Metric Tons.	Metric Tons.	Marks.
(*a*) Potassium sulphate ..	1	6	36,089	10,438	1,706,929	1	6	47,001	13,577	2,209,882
(*b*) Potassium and magnesium sulphate.	—	3	‡	7,328	557,587	—	4	‡	11,228	828,760
(*c*) Sodium sulphate ..	8	8	37,764	45,356	1,060,478	7	8	35,895	43,928	1,118,320
2. Earthy Sulphates:—										
(*a*) Aluminium sulphate..	6	1	10,319	12,037	801,361	6	1	9,573	11,347	699,676
(*b*) Alum	2	1	724	763	71 108	2	1	836	932	86,597
3. Magnesium chloride ..	—	2	18	5,766	88,414	—	2	18	6,482	98,876
4. Magnesium sulphate ..	—	9	35	21,799	390,883	—	8	35	19,967	336,739
5. Potassium chloride ..	12	3	534,410	101,710	13,299,491	11	3	602,946	107,760	14,173,740
6. Salt (sodium chloride) ..	36	6	98,810	274,888	6,573,892	36	5	95,537	286,051	6,560,855
Total	65	39	718,169	490,087	24,561,943 £1,228,097	63	38	791,041	501,022	26,113,439 £1,305,672

TABLE 427.

DEATHS from ACCIDENTS at MINES and other MINERAL WORKINGS during the Years 1897 and 1898.§

Kind of Mines or other Mineral Workings.	1897.		1898.	
	Number of Deaths.	Death-rate per 1,000 Persons Employed.	Number of Deaths.	Death-rate per 1,000 Persons Employed.
Brown coal	78	2·36	70	1·99
Coal	714	2·35	929	2·86
Ore	68	1·05	65	·99
Other mineral workings	23	1·61	30	1·96
Total	883	2·12	1,094	2·48

* *Zeitschr. B. H. S. W.*, Vol. XLVI., p. 21.
† *Zeitschr. B. H. S. W.*, Vol. XLVII., p. 21.
‡ Included with 1 (*a*) and 5.
§ *Zeitschr. B. H. S. W.*, Vol. XLVII., p. 45.

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GERMAN EMPIRE.—PRUSSIA—*continued.*

TABLE 428.

DEATHS from ACCIDENTS at MINES and MINERAL WORKINGS, classified according to kind of MINERAL WORKED, and cause of ACCIDENT, during the Year 1898, and the DEATH-RATE for 1897.*

Cause of Accident.	Deaths from Accidents.					Death-rate per 1,000 Persons Employed.	
	Brown Coal Mines.	Coal Mines.	Ore Mines.	Other Mineral Workings.	Total.	1898.	1897.
Blasting	—	33	6	2	41	·09	·09
Falls of ground ...	22	318	22	7	369	·84	·74
On inclines and intermediate shafts.	1	114	3	—	118	·27	·27
In shafts	12	121	18	10	161	·37	·33
In levels	2	39	3	—	44	·10	·13
Fire-damp	—	145	—	—	145	·33	·15
Suffocation ...	1	14	2	—	17	·04	·07
Machinery	2	14	2	2	20	·05	·03
Irruptions	—	—	—	—	—	—	·03
On surface	26	63	5	8	102	·23	·21
Sundries	4	68	4	1	77	·17	·08
Total ...	70	929	65	30	1,094	2·48	2·12

The four worst accidents† in the year were :—

(*a.*) An explosion of fire-damp and coal dust at Ver. Carolinenglück Colliery in Westphalia, causing 116 deaths.

(*b.*) A fire in a shaft at Zollern Colliery, causing 44 deaths.‡

(*c.*) The fall of a cage at Cons. Paulus Hohenzollern Colliery, from the rope coming out of the socket, causing 25 deaths.

(*d.*) A case of overwinding at General Blumenthal Colliery, causing 17 deaths.

TABLE 429.

EXPLOSIONS of FIRE-DAMP or COAL DUST classified according to CAUSE.§

	Cause.	1897.			1898.		
		Number of Separate Fatal Accidents.	Number of Separate Non-fatal Accidents.	Total.	Number of Separate Fatal Accidents.	Number of Separate Non-fatal Accidents.	Total
I. Lighting	1. Naked lights ...	—	2	2	2	6	8
	2. Matches or smoking	1	1	2	—	1	1
	Safety Lamps. 3. Illegally opened ...	4	6	10	3	—	3
	Safety Lamps. 4. In defective condition or injured during work.	1	13	14	1	6	7
	Safety Lamps. 5. Gauze becoming red hot.	2	1	3	—	—	—
	Safety Lamps. 6. Oil or soot on gauze taking fire	—	—	—	—	—	—
	Safety Lamps. 7. Flame driven through gauze by ventilating current.	—	3	3	—	2	2
	Safety Lamps. 8. Flame driven through gauze by improper handling.	6	13	19	5	13	18
	Safety Lamps. 9. Passage of flame when relighting by amorces	1	1	2	—	—	—

* *Zeitschr. B. H. S. W.*, Vol. XLVII., pp. 48–50.
† *Ibid.*, p. 51.
‡ Hundt, "Der Schachtbrand auf Zeche Zollern in Westfalen am 22 Mai 1898." *Zeitschr. B. H. S. W.*, Vol. XLVI., 1898, p. 294.
§ *Zeitschr. B. H. S. W.*, Vol. XLVII. pp. 67 and 68.

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GERMAN EMPIRE.—PRUSSIA—*continued.*

TABLE 429—*continued.*

Cause.		1897. Number of Separate Fatal Accidents.	1897. Number of Separate Non-fatal Accidents.	1897. Total.	1898. Number of Separate Fatal Accidents.	1898. Number of Separate Non-fatal Accidents.	1898. Total.
II. Shot firing ...	10.	3	8	11	1	11	12
III. Underground fires.	11. Ventilating furnaces	—	—	—	—	—	—
	12. Accidental or spontaneous ignition of mineral, timber, or other material.	—	—	—	—	—	—
IV. Miscellaneous	13. Sparks from tools (?)	—	—	—	—	—	—
	14. Sundries or unknown	—	2	2	—	2	2
Total		18*	50	68	12†	41	53

An interesting comparison has lately been published‡ between the accidents at Prussian and at British collieries. In order to make the comparison effective, the British statistics have been reduced to the German headings, and the general results are summed up in the following table :—

TABLE 430.

Country.	Year.	Death-rate per 1,000 Employed.	Percentage of the Total Number of Deaths. Falls of Stone or Coal.	On Inclined Planes.	In Shafts.	Explosions of Fire-damp and Coal Dust.	Haulage.	By Explosives.	Suffocation by Natural Gases.	On Surface.
Coal mines in Prussia	1896	2·58	33·7	13·1	9·7	5·2	3·4	3·1	16·4	9·9
" " " "	1897	2·35	34·2	14·7	14·8	8·9	6·7	4·5	2·9	7·9
" " " "	1898	2·86	34·2	12·3	13·0	15·6	4·2	3·6	1·5	6·8
" " " United Kingdom	1896	1·48	41·2	6·8	6·6	17·1	9·4	2·7	·1	12·0
" " " " " ...	1897	1·32	51·6	8·9	6·1	1·9	11·7	2·2	·3	10·7
" " " " " ...	1898	1·28	47·7	8·1	7·6	3·0	9·1	1·8	·3	14·4

The principal points deserving notice are these :—

(1.) The average death-rate from accidents is decidedly lower at British collieries than at Prussian collieries.

(2.) Deaths from falls of ground form a smaller proportion of the total number of deaths at Prussian than at British collieries.

(3.) Deaths from accidents in shafts form a larger proportion of the total number of deaths in Prussian than in British collieries.

(4.) Deaths from accidents above ground form a much higher proportion of the total number of deaths at British than at Prussian collieries.

* Causing 64 deaths, *Ibid.*, Vol. XLVI., p. 64.
† " 145 " *Ibid.*, Vol. XLVII., p. 64.
‡ "Die tödlichen Unfälle im preussischen und britischen Steinkohlenbergbau im Jahre 1898." *Glückauf*, Vol. XXXV., 1899, p. 789.

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It is flattering to Great Britain to find that the comparative safety of our workings is fully recognized.

The Annual Report of the Dortmund Mining Association,* in discussing the question how the number of accidents may best be diminished, says, that the practice of other countries proves that the plan adopted in Germany of continually increasing the number of officials is not desirable. If a large proportion of overseers, in comparison with the number of the workmen, of itself conduced to safety, British mining would be one of the most dangerous, and German mining one of the safest. This is not the case. Thanks to permanent state of the industry, very favourable natural conditions, and the gradual training in independence of each workman, the British accident ratio is almost the lowest of all, whilst the German figure still remains high.

As verbal misunderstandings may lead to accidents, the Westphalian mining authorities have wisely prohibited the employment underground of persons unacquainted with the German language. This edict, which was published in the "Kölnische Zeitung" on the 2nd December 1898, is aimed against "ignorant Polish workmen, who might meet "with accidents themselves or be a source of danger to their fellow miners from not "understanding orders or warnings." It may be here mentioned that the same danger exists on a far smaller scale, however, in this country, for some Poles are employed in coal mines in Scotland. For their benefit the Special Rules have been translated into Russian, just as the mining regulations in Victoria have been translated into Chinese.

SAXONY.†

TABLE 431.

PERSONS EMPLOYED at MINES during the Years 1897 and 1898.

Kind of Mines.	1897.			1898.		
	Males.	Females.	Total.	Males.	Females.	Total.
Brown coal	2,122	127	2,249	2,318	135	2,453
Coal	22,442	338	22,780	22,491	353	22,844
Ore	5,128	1	5,129	4,620	—	4,620
Total	29,692	466	30,158	29,429	488	29,917

According to the Saxon Year-book, 73,400 persons were dependent upon the 29,917 workers in and about mines.

TABLE 432.

QUANTITY and VALUE of MINERALS obtained during the Years 1897 and 1898.

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Marks.	Metric Tons.	Marks.
Barytes	218	2,466	478	5,082
Bismuth, cobalt, and nickel ores ...	3,031	527,807	3,043	544,678
Brown coal	1,073,239	2,665,433	1,180,928	2,912,616
Coal	4 571,685	46,252,857	4.436,455	47,316,005

* *Jahresbericht des Vereins für die bergbaulichen Interessen im Oberbergamtsbezirk Dortmund für das Jahr 1898*, Essen, 1899, p. 64.

† *Jahrbuch für das Berg-und Hüttenwesen im Königreiche Sachsen auf das Jahr 1899*, Freiberg, pp. 77, 79, 179, and 180.

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GERMAN EMPIRE.—SAXONY—*continued.*

TABLE 432—*continued.*

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Marks.	Metric Tons.	Marks.
Fluor spar	592	4,440	775	5,812
Iron ore	13,181	51,347	5,671	24,787
Limestone, &c.	65	30,727	—	32,440
Manganese ore	260	2,550	—	—
Ochre and umber	93	2,574	440	5,268
Pyrites (arsenical, iron, and copper)...	9,402	116,449	6,410	65,075
Quartz, mica, and uranium ore ...	40	2,517	117	6,515
Silver ore	11,429	1,798,501	14,659	1,871,111
Tin ore	55	23,926	51	23,829
Wolfram	37	28,140	51	46,387
Zinc ore	112	2,315	29	355
Specimens	—	2,162	—	3,684
Total value in marks ...	—	51,514,211	—	52,863,644
„ „ „ £ sterling ...	—	£2,575,711	—	£2,643,182

TABLE 433.

DEATHS and DEATH-RATES from ACCIDENTS at MINES during the Years 1897 and 1898.

Kind of Mines.	Deaths from Accidents.		Death-rate* per 1,000 Persons Employed.	
	1897.	1898.	1897.	1898.
Brown coal	8	12	3·61	4·97
Coal	38	28	1·69	1·24
Ore	5	3	·92	·66
Total and average	51	43	1·71	1·45

* In calculating the Death-rate the persons employed in commercial work above ground numbering about 1,300 yearly are excluded.

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Greece.

The principal mineral productions of Greece are the ores of iron, lead, manganese, and zinc, and they are chiefly obtained from the Laurium district in Southern Attica.

Improved means of transport are being introduced at the Pentelicus Quarries,* which will considerably reduce the expense of supplying the marble.

Eubœa is further famous for its marble quarries, which supplied large quantities of "cipollino" to ancient Rome.† Work at these quarries has recently been resumed.

Lignite is worked at Koumi, where 15,000 tons are extracted yearly, and at Oropos and Alio-crion.‡

Milo§ yields gypsum, manganese ore, millstones, and sulphur. Seriphos exports iron ore in increasing quantities. Naxos has long been famous for its emery. Zea, though containing deposits of the ores of lead and manganese, exports nothing but a little iron ore.

Salt is obtained from sea water in the Island of Leucados and at Anavyssos near Laurium. The salt industry is a Government monopoly.

TABLE 434.

PERSONS EMPLOYED at MINES during the Year 1894.‖

Under-ground.			Above-ground.			Total Under and Above Ground.
Males.	Females.	Total.	Males.	Females.	Total.	
3,393	17	3,410	2,491	196	2,687	6,097

TABLE 435.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.¶

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Francs.	Metric Tons.	Francs.
Chromite	568	22,720	1,367	54,680
Emery	4,769	507,898	7,742	824,523
Gypsum	75	6,750	96	8,640
Iron ore	419,913	3,779,217	485,159	4,336,431
Lead (argentiferous pig lead) ...	15,747	7,401,090	11,598	5,451,060
„ ore...	8,093	299,441	1,139	42,143
Lignite	13,770	137,700	17,310	173,100
Magnesite	12,767	255,340	15,279	305,580
Manganese ore	11,710	351,300	14,097	422,910
Millstones ... ... *Pieces*	15,000	37,500	15,000	37,500
Salt from sea water	16,500	1,650,000	20,000	2,002,000
Sulphur	346	31,140	135	12,150
Zinc ore	24,586	2,089,810	32 520	2,764,200
Total value in francs	—	16,569,906	—	16,434,917
„ „ £ sterling ...		£662,796		£657,397

* Consul Walsh, "Trade of the Piræus for the Year 1898." *Dipl. and Cons. Reports*, No. 2,225, Ann. Ser., 1899 [C. 9044-51]. p. 8.

† "Modern Working of the old Eubœan Marble Quarries." *Stone*, Vol. XIX., New York, 1899, p. 213.

‡ *Eng. Min. Jour.*, Vol. LXVIII., No. 6, p. 156.

§ Consul Cottrell "Trade of the Cyclades for the Year 1898." *Dipl. and Cons. Reports*, No. 2,252, Ann. Ser., 1899 [C. 9044-78]. pp. 9 and 11.

‖ Official Return furnished by the Bureau of Mines. Athens. Later figures not available.

¶ Return furnished by the Bureau of Mines, Athens.

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GREECE—*continued.*

TABLE 436.

DEATHS from ACCIDENTS at MINES during the Year 1894.*

Under-ground.			Above-ground.			Total Under-ground and Above-ground.	Death-rate per 1,000 Persons Employed.
Males.	Females.	Total.	Males.	Females.	Total.		
9	—	9	—	—	—	9	1·48

Greenland. (*See* DENMARK.)

Guatemala.†

The following minerals are found in different parts of the Republic, viz., the ores of copper, gold, iron, lead, and silver, besides coal, lignite, gypsum, marble, salt, sulphur, and turquoises.

The principal mines being worked in 1897 were :—

(1) Gold mines in the Departments of Izabal and Baja Vera Paz.
(2) Silver mines in the Departments of Santa Rosa and Chiquimula.
(3) Salt mines in the Departments of Alta Vera Paz and Santa Rosa.

Hayti.‡

Coal, copper, quicksilver, and other minerals are said to exist, but at present the deposits have not been developed.

Herzegovina. (*See* AUSTRIA-HUNGARY.)

Holland.§

Holland possesses immense peat bogs,‖ which produce about 100 million hectolitres of good fuel annually. Since 1893 the turbaries have been further utilized for making peat litter. There are now nine factories producing it ; they employ 2,500 persons, and their total output is more than 220,000 tons of peat litter a year.

There are coal mines at Heerlan and Kerkrade¶ ; and underground stone quarries are worked at Maastricht and Volkenburg.

TABLE 437.

PERSONS EMPLOYED at MINES during the Years 1897 and 1898.

Year.	Under-ground.			Above-ground.			Total Under-ground and Above-ground.
	Males.	Females.	Total.	Males.	Females.	Total.	
1897 ...	344	—	344	137	2	139	483
1898 ...	409	—	409	238	2	240	649

* **Return** furnished by the Bureau of Mines, Athens. Later information about accidents not available.
† **Consul** Trayner, "Trade of Guatemala for the Year 1897." *Dipl. and Cons. Reports*, No. 2,139, Ann. Ser., 1898 [C. 8648–161].
‡ **Acting** Consul-General Siordet. "Trade of the Republic of Hayti for the Year 1898." *Dipl. and Cons. Reports*, No. 2,358, Ann. Ser. 1899 [C. 9496–29], p. 6.
§ **Official** Returns furnished by the Government of the Netherlands.
‖ **Rommenhöller**, *Mouvement du Commerce et de l'Industrie des Pays-Bas durant l'exercice 1898.* Rotterdam, 1899, p. 122.
¶ **Büttgenbach**, "Die Geologie des alten Herzogthums Limburg." *B.u.h. Zeitung*, Vol. LVII., 1898, p. 363.

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HOLLAND—*continued.*

TABLE 438.

PERSONS EMPLOYED at MINERAL WORKINGS other than MINES during the Years 1897 and 1898.

Year.	Under-ground.			Above-ground.			Total Number of Persons Employed in and about Mineral Workings other than Mines.
	Males.	Females.	Total.	Males.	Females.	Total.	
1897 ...	40	—	40	95	—	95	135
1898 ...	40	—	40	80	—	80	120

TABLE 439.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
		Florins.		Florins.
Building stone ... *Cubic Metres*	2,178	4,275	2,000	4,000
Coal ... ... *Metric Tons*	150,145	381,220	150,398	405,322
Total value in Florins	—	385,495	—	409,322
„ „ £ sterling ...	—	£32,125	—	£34,110

TABLE 440.

DEATHS from ACCIDENTS at MINERAL WORKINGS other than MINES during the Years 1897 and 1898.

Year.	Under-ground.			Above-ground.			Total Number of Deaths Under and Above Ground.	Death-rate per 1,000 Persons Employed.	
	Males.	Females.	Total.	Males.	Females.	Total.		Above-ground.	Under and Above Ground.
1897	—	—	—	1	—	1	1	7·40	2·07
1898	—	—	—	—	—	—	—	—	—

Indo-China.

ANNAM.

Annam and Tong-King possesses large deposits of coal, iron ore, and argentiferous lead ore; besides having also asbestos, graphite, kaolin, and marble, and the ores of antimony, copper, gold, manganese, nickel, quicksilver, and tin.*

The "Société des houillères de Tourane" obtained 3,911 tons of coal in 1897 from their collieries, which are situated at Nong-son.† The quantity exported in 1898 was 2,300 tons.‡

Iron ore§ is being smelted on a very small scale by the natives at Nho-Lam in the province of Quang-nam.

* *B.u.h. Zeitung*, Vol. LVIII., 1899, p. 292.
† *Statistique de l'Industrie Minérale en France et en Algérie, pour l'année 1897*, p. 79.
‡ *Ibid. 1898*, p. 79.
§ Consul Tremleff, "Trade of Saigon and District for the Year 1897." *Dipl. and Cons. Reports*, No. 2,060, Ann. Ser., 1898 [C. 8648-82].

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INDO-CHINA—*continued*.

COCHIN CHINA.*

6,200 kilograms of jet, valued at 12,400 francs, were obtained from mines in the island Phu-Quoc in the year 1895; but the mines do not appear to have been worked since, as no quantity is reported in the French statistics.

TONG-KING.† (*See also* ANNAM.)

The "Société Française des Charbonnages de Hongay" has large open workings for coal in Haton, and a mine 140 m. deep in Nagotma. It exports 15,000 tons of coal a month.

The Hongay coal is generally characterized by the small percentage of ash and of sulphur. On the whole it is an anthracitic coal with a small percentage of hydrogen, and it burns with a short flame and scarcely any smoke.

The Hongay and the Kebao collieries produced altogether 192,597 tons of coal in 1897, and 244,800 tons in 1898.‡

Copper of good quality is produced from the mines in the provinces of Sontay, Langson, and Laokay.

Iron mines are numerous and productive in the provinces of Hanoy and Sontay.

Italy.

An excellent summary § of the mineral industries of Italy is appended to the catalogue of the exhibits made by the Government at the Turin Exhibition of 1898. In a few words, the nature of the principal kinds of mines and quarries may be stated as follows:—

Sulphur is the most important mineral raised in the kingdom, and the bulk of it is obtained from Sicily. Next come zinc and lead ore; these are far more largely worked in Sardinia than in the peninsula itself. Again, in the case of iron ore, it is an island, Elba, which is the mainstay of the industry. England absorbs about two-thirds of the entire output, and Germany most of the remaining third.‖ The marble quarries of the Apuan Alps have long been a source of wealth to the country.

The following are a few particulars concerning some of the minerals:—

Alunite.—Quarrying natural alum-stone is a very old industry in the Tolfa hills north-east of Civita Vecchia. The open workings have now given place to underground mining, but the total output at the present day amounts to only a few thousand tons annually.

Asphalt.—A large quantity of bituminous limestone is quarried at Ragusa Superiore in the province of Syracuse. The principal seam is from 13 feet to 20 feet (4 to 6 m.) in thickness, and contains from 16 to 50 per cent. of bitumen. A similar bituminous rock is worked in the Abruzzi.

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* *Statistique de l'Industrie Minérale en France et en Algérie, pour l'année 1896*, p. 76.

† *B.u.h. Zeitung*, Vol. LVIII., 1899, p. 292.

‡ *Statistique de l'Industrie Minérale en France et en Algérie, pour l'année 1897*, p. 79. *Ibid. 1898*, p. 86.

§ *Catalogo della Mostra fatta dal Corpo Reale delle Miniere all' Esposizione Generale Italiana del 1898 in Torino*, Rome, 1898.

‖ Consul Tonietti, "Trade of the Island of Elba for the Year 1898." *Dipl. and Cons. Reports*, No. 2,274, Ann. Ser., 1899 [C. 9044-100], p. 4.

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ITALY—*continued*

Boric Acid.—The amount of boric acid produced from the natural steam-puffs (*soffioni*) in the provinces of Pisa and Grossetto varies from two to three thousand tons yearly.

Brown Coal.—Italy greatly lacks supplies of fossil fuel. Lignite is worked in Tuscany and in Umbria.

Copper.—The principal mines are those of Montecatini in the province of Pisa, besides Libiola and its neighbours in Eastern Liguria.

Gold.—The gold veins in the flanks of Monte Rosa were worked by the Romans, and still continue to supply the precious metal.

Granite.—Piedmont boasts of excellent red granite and white granite, and the quarries at Baveno and Mont'Orfano on the Lago Maggiore are worked upon an extensive scale.

Iron.—The thick deposits of iron ore in the Island of Elba have been worked for many centuries, and are not yet exhausted. The ore is obtained in open quarries, is loaded at once into barges, and then transhipped into large steamers, which convey it to England, France, Germany, and even America. But a total output of only 200,000 tons is small compared with that of other iron-producing countries.

Lead and Zinc.—Sardinia is remarkable for its deposits of the ores of lead and zinc. Malfidano, in the province of Cagliari, is the most important zinc mine in the island. It employs 2,000 workmen, and produces annually on an average 51,500 tons of zinc ore, worth nearly £150,000.

Marble.—The well-known Carrara marble is obtained from beds of crystalline limestone of Triassic age, which in places attain the enormous thickness of more than 3,000 feet (1,000 m.). In addition to the finest white statuary marble, the quarries furnish many coloured varieties, each known in commerce by its special name.

The importance of the industry may be gauged by the fact that the quarries and dressing establishments of the Apuan Alps gave work to 10,155 persons in 1897, or about the same number as are employed in all the open slate quarries of North Wales.

Pozzolana.—The deposits of volcanic ash near Rome, which furnished an important ingredient of the mortar employed in ancient times, are still being worked, and not only for home use but also for export. Pozzolana is likewise largely quarried in the district of Naples.

Quicksilver.—Cinnabar is obtained at Monte Amiata in Tuscany.

Rock Salt.—The deposits of rock salt worked in Sicily belong to the Upper Miocene period, and lie geologically above the sulphur-bearing rocks. The Sicilian mines produce from 12,000 to 15,000 tons a year, but this output might be very largely increased.

Sulphur.—The sulphur of Sicily is found in seams and lenticular masses in rocks of Upper Miocene age, and mainly in the provinces of Caltanisetta and Girgenti. At the end of 1897 there were 704 mines at work, employing 28,418 workmen, and the output of sulphur-bearing rock was 3,092,382 tons. Most of the mines are small and shallow; the deepest workings are only 270 yards (250 m.) from the surface, whilst the average depth is from 100 to 200 yards.

About one-half of the crude rock is treated for the extraction of its sulphur in the old-fashioned kilns (*calcaroni*), four-tenths in kilns with communicating chambers, and one-tenth in steam apparatuses. The total amount of unrefined sulphur obtained in these three ways in 1897 was 470,327 tons, to which must be added 3,784 tons which ran out in the liquid state from mines on fire, and 1,090 tons sold untreated.

The official catalogue* contains an account of the constitution of the Royal Corps of Mining Engineers, whose functions are far more extensive than those of the British Inspectors of Mines.

* *Op. cit.*, p. 87.

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ITALY—*continued.*

TABLE 441.

NUMBER of MINERAL WORKINGS, VALUE of OUTPUT, and NUMBER of PERSONS EMPLOYED in the Years 1897 and 1898.*

Kind of Workings.	1897.			1898.		
	Number at Work.	Total Value of Output.	Number of Persons Employed.	Number at Work.	Total Value of Output.	Number of Persons Employed.
		Lire.			Lire.	
Mines, &c.	1,359	64,670,383	53,576	1,404	71,804,071	57,849
Quarries	5,307	30,197,988	31,520	5,356	31,224,142	32,153
Turbaries	41	198,130	861	45	246,064	1,098
Sea salt	72	4,428,187	3,148	66	3,552,507	3,758
Total	—	Lire 99,494,688 £ sterling 3,979,787†	89,105	—	Lire 106,826,784 £ sterling 4,273,071†	94,858

TABLE 442.

NUMBER of PERSONS EMPLOYED in and about MINES and other MINERAL WORKINGS (exclusive of Quarries, Turbaries, and Sea Salt Workings) during the Years 1897 and 1898,* classified according to mineral wrought.

Kind of Mines or other Mineral Workings.	1897.		1898.	
	Number of Mines or Workings.	Number of Persons Employed.	Number of Mines or Workings.	Number of Persons Employed.
Alum-stone	1	86	1	96
Antimony ore	15	180	20	269
Arsenic ore	1	6	1	6
Asphalt, &c.	15	805	15	1,259
Boric acid	12	345	12	367
Copper ore	31	1,553	27	1,839
Fossil fuel: anthracite, brown coal, fossil wood, and bituminous shale.	55	2,285	51	2,683
Gas, carburetted hydrogen	(*a*)	(*a*)	(*a*)	(*a*)
Gold ore	47	828	40	825
Graphite	11	81	19	13
Iron ore	19	1,335	29	2,000
Iron pyrites	10	792	8	840
Lead ore	(*b*)	(*b*)	(*b*)	(*b*)
Manganese ore	7	80	9	138
Manganese and iron ore	1	181	1	160
Mineral waters	(*a*)	(*a*)	(*a*)	(*a*)
Nickel and cobalt ore	2	5	—	—
Petroleum	20	489	14	405
Quicksilver	12	470	9	492
Rock salt	26	337	29	355
Salt from springs	(*a*)	(*a*)	(*a*)	(*a*)
Silver ore	16	701	11	630
Sulphur	883	31,246	919	32,030
Zinc ore	175	11,771	189	13,322
Total	1,359	53,576	1,404	57,849

(*a*) Included with persons employed at petroleum workings. (*b*) Included with zinc ore.

* *Rivista del Servizio Minerario nel 1897*, pp. xlii. and xliii., *nel* 1898, pp. xxxiii. and xlvi.

† Value calculated at 25 Lire = 1*l.* sterling.

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ITALY—*continued.*

TABLE 443.

QUANTITY and VALUE of MINERALS produced from MINES, QUARRIES, TURBARIES, and SALT WORKS during the Years 1897 and 1898.*

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Lire.	Metric Tons.	Lire.
Alum-stone	6,500	32,500	7,000	35,000
Antimony ore	2,150	174,320	1,931	219,112
Arsenic ore	34	3,400	—	—
Asphalt, &c.	55,339	948,273	93,750	1,328,224
Boric acid	2,704	865,280	2,650	848,000
Copper ore	93,377	2,156,146	95,128	2,131,497
Fossil fuel: anthracite, brown coal, fossil wood, and bituminous shale.	314,222	2,335,557	341,327	2,429,825
Gas, carburetted hydrogen (cubic metres).	298,069	17,861	464,931	18,466
Gold ore...	10,723	890,048	9,549	644,134
Graphite	5,650	56,500	6,435	87,115
Iron ore	200,709	2,860,511	190,110	2,746,239
„ „ manganiferous	21,262	170,096	11,150	133,800
Iron pyrites	58,320	780,138	67,191	828,051
Lead ore	(*a*) 36,860	5,065,825	(*b*) 34,180	5,231,240
Manganese ore	1,634	75,040	3,002	93,535
Mineral waters	28,680	351,336	28,340	358,960
Peat	14,634	198,130	18,327	246,064
Petroleum	1,932	492,282	2,015	589,129
Quicksilver	20,659	788,910	19,201	661,113
Rock salt	19,801	272,018	18,199	305,735
Salt from springs	11,725	315,500	11,546	297,839
Salt, sea	429,253	4,428,187	451,426	3,552,507
Silver ore	405	428,260	435	380,238
Sulphur, rock	3,314,051	37,310,255	3,362,841	40,375,152
Zinc ore	122,214	8,280,327	132,099	12,061,667
Produce from quarries (value) ...	—	30,197,988	—	31,224,142
Total value in lire	—	99,494,688	—	106,826,784
„ „ £ sterling ...	—	£3,979,788	—	£4,273,071

(*a*) Including 660 tons of lead and zinc ore, of the value of 23,200 lire.
(*b*) Including 250 tons of lead and zinc ore, of the value of 10,000 lire.

TABLE 444.

ACCIDENTS at MINES, arranged according to CAUSES, during the Years 1897 and 1898.†

Cause.	1897.					1898.				
	No. of separate Accidents.	No. of Persons Killed.	No. of Persons Injured.	Number of Deaths.		No. of separate Accidents.	No. of Persons Killed.	No. of Persons Injured.	Number of Deaths.	
				Per 1,000 Persons Employed.	Per 1,000,000 lires' worth of Mineral produced.				Per 1,000 Persons Employed.	Per 1,000,000 lires' worth of Mineral produced.
Falls of ground ...	114	93	74	1·74	1·44	123	51	99	·88	·48
Suffocation by gases, explosions, and fires.	21	14	25	·26	·22	18	12	27	·21	·11
Falling down shafts, &c., and miscellaneous.	51	14	38	·26	·22	47	15	37	·26	·14
Blasting	8	2	6	·04	·03	10	4	8	·07	·04
Total ...	194	123	143	2·30	1·90	198	82	171	1·42	·77

* *Rivista del Servizio Minerario nel 1897*, pp. xxv., xxxii., and xliii., *nel 1898*, pp. xxvi., xxxiii., and xlvi.
† *Ibid.*, *1897*, pp. c. and ci., *nel 1898*, pp. lxi. and lxii.

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ITALY—*continued.*

TABLE 445.

ACCIDENTS at QUARRIES, arranged according to CAUSES, during the Years 1897 and 1898.*

Cause of Accident.	1897.				1898.			
	Number of separate Accidents.	Number of Persons Killed.	Number of Persons Injured.	Death-rate per 1,000 Persons Employed.	Number of separate Accidents.	Number of Persons Killed.	Number of Persons Injured.	Death-rate per 1,000 Persons Employed.
Falls of ground	24	17	13	·54	33	20	17	·62
Falling down workings, and miscellaneous.	34	7	29	·22	27	8	20	·25
Blasting	4	1	3	·03	5	1	4	·03
Total	62	25	45	·79	65	29	41	·90

Japan.

In addition to its well-known deposits of coal and copper ore, Japan is said to possess great wealth in the ores of gold, iron, lead, silver, and zinc. The most important coal mines are upon the Island of Kiushiu. Sulphur is obtained from volcanic deposits at the surface.

TABLE 446.

PERSONS EMPLOYED at MINES during the Years 1896† and 1897.

Mines.	Persons Employed in the Year.	
	1896.	1897.‡
Coal	53,751	
Other Mines	64,766	
Total	118,517	

In addition to the above, 5,673 persons were employed at other mineral workings during the year 1896.

* *Rivista del Servizio Minerario nel 1897*, p. ciii., *nel 1898*, p. lxv.
† *Fifth Statistical Abstract of the Mineral Industry*, published by the Mining Bureau of the Department of Agriculture and Commerce, Tokio, 1897.
‡ Figures are not yet available.

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JAPAN—*continued.*

TABLE 447.

QUANTITY and VALUE of MINERALS and METALS produced during the Years 1896* and 1897.†

Mineral or Metal.	1896.		1897.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	£	Metric Tons.	£
Antimony, crude (metal)...	827	23,006	936	15,231
„ refined (metal)...	517		947	17,501
Arsenic (metal)	6	102	13	151
Coal	5,019,690	1,275,787	5,647,751	2,066,088
Copper (metal)	20,114	720,484	20,770	794,973
Gold „	Kilos. 963	106,213	Kilos. 1,018	117,727
Graphite	215	1,385	204	3,215
Iron, pig	27,421	93,376	57,678	85,942
„ pyrites			5,698	2,407
„ speiss			Not reported.	—
„ vitriol			40	54
Lead (metal)	1,958	20,514	1,737	18,839
Manganese	17,966	12,527	17,351	9,814
Petroleum, refined	Litres 37,593,153	38,228	Litres 4,719,903	14,079
„ crude			„ 39,208,411	32,776
Quicksilver	2	293	3	446
Salt	—	—	Not reported.	—
Silver (metal)	Kilos. 64,449	254,471	Kilos. 57,208	200,987
Sulphur	12,540	25,114	12,013	29,588
Tin (metal)	50	2,267	1 737	18,838
Total value	—	2,573,767	—	3,428,656

TABLE 448.

ACCIDENTS at MINES during the Years 1896–8.

Year.	Killed.	Injured.	Death-rate per 1,000 Persons Employed.
1896	44	45	0·37
1897	15	28	‡
1898	67	(Not stated.)	‡

Java. (*See* DUTCH EAST INDIES.)

Johore.§

Gold has been found in one or two places, and the country is rich in iron ore. Important deposits of tin have been discovered in several places, and considerable tin mining is now carried on in the Ulu Johore districts, and some at Bukit More, Padang.

Lourenço Marques. (*See* PORTUGUESE EAST AFRICA.)

* *Fifth Statistical Abstract of Mineral Industry*, published by the Mining Bureau of the Department of Agriculture and Commerce, Tokio, 1897.

† Official Return furnished by the Mining Bureau of the Department of Agriculture and Commerce, Tokio.

‡ As the number of persons employed is not yet available the death-rates for 1897 and 1898 cannot be calculated.

§ *The Straits Directory*, 1899, p. 288.

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Luxemburg.

The only important mineral production of the Grand Duchy of Luxemburg is iron ore. On account of the commercial connection of Luxemburg with Germany, the returns of the mines are given in the German Mineral Statistics, and will be found under "German Empire."

Madagascar.*

The mineral wealth of the island appears to be great. In addition to gold, which is found in alluvial deposits widely spread over the island, the ores of antimony, copper, iron, and tin are said to be abundant, to say nothing of asphalt, coal, and petroleum.

Mexico.†

Many minerals are obtained in Mexico. The most important are the ores of copper, gold, lead, and silver. During the past year a substantial increase in output, as compared with 1897–8, is recorded in the case of the first three.

The Compania Minera del Boleo, of Lower California, was the largest exporter of copper in 1898.

TABLE 449.

PERSONS EMPLOYED at MINES during the Year 1897.

Men.	Women.	Boys.	Total.
98,466	356	30	98,852

TABLE 450.

VALUE of MINERALS produced and exported during the Fiscal Years 1897–1899.

Mineral.	1897–8.		1898–9.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	$	Metric Tons.	$
Antimony ore	5,609	65,873	6,359	101,318
Asphalt	—	190	42	1,382
Coal	106,405	438,261	126,251	507,902
Copper and Copper ore	20,367	4,771,631	22,019	5,601,134
Gold	Kilos. 10,964	7,405,230	Kilos. 13,092	8,843,081
Graphite...	907	8,663	1,857	18,237
Gypsum	2,250	11,250	450	2,250
Iron ore	—	—	21	208
Lead	58,514	2,909,705	65,004	3,786,144
Manganese	121	3,326	—	—
Marble	845	85,764	294	30,415
Pumice stone	—	1,300	—	10
Salt	2,893	16,691	1,862	8,605
Silver	Kilos. 1,667,777	68,237,102	Kilos. 1,623,647	66,431,541
Sulphur	280	3,000	—	—
Tin	—	—	—	4
Zinc ore	1,630	22,323	84	840
Total value in $	—	83,980,309	—	85,333,071
„ „ £	—	£8,747,949	—	£9,377,748

* Consul Turner "Trade of Madagascar for the Year 1898." *Dipl. and Cons. Reports*, No. 2334, Ann. Ser., 1899 [C. 9496-5].
† Official Return furnished by the Ministry of Finance, Mexico.

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MEXICO—*continued.*

TABLE 451.

DEATHS from ACCIDENTS at MINES during the Years 1896 and 1897.

Year.	Number of Deaths.	Death-rate per 1,000 Persons Employed.
1896	175	1·77
1897	136	1·37

Morocco.*

There are a few mineral workings in this country; saltpetre is obtained in two localities; brine springs and lakes yield salt, and copper ore is extracted from mines worked in a primitive fashion.

Netherlands and its Colonies. (*See* HOLLAND, DUTCH EAST INDIES, AND DUTCH WEST INDIES.)

New Caledonia.†

The three principal minerals produced by this country are the chromic iron, cobalt ore, and nickel ore.

Chrome Ore.—The output of chrome ore, which dropped in 1897 to one-fifth of what it was in 1896, considerably increased in 1898.

Cobalt Ore.—Here again there is an increased output in 1898 compared with the previous year.

Nickel Ore.—Nickel mining has declined in importance very considerably since 1892, when the output was 83,000 tons; but in spite of Canadian competition, the outlook in New Caledonia is improving, the quantity obtained in 1898 being more than double that of 1897.

TABLE 452.

PERSONS EMPLOYED at MINES during the Years 1897 and 1898.‡

Year.	White.	Coloured.	Total.
1897	3,273	1,074	4,347
1898	3,831	1,259	5,090

* Meakin, "The Mineral Resources of Morocco," *Min. Jour.*, Vol. LXVIII., 1898, p. 1034.
† *Statistique de l'Industrie Minérale en France et en Algérie, pour l'année, 1897*, p. 79. *Ibid, 1898*, p. 85.
‡ Official Return furnished by the French Government.

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NEW CALEDONIA—*continued.*

TABLE 453.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.

Mineral.	Percentage of Metal.	1897.		1898.	
		Quantity.	Value.	Quantity.	Value.
		Metric Tons.	Francs.	Metric Tons.	Francs.
Chrome ore	51 ($Cr_2 O_3$)	3,949	200,000	14,300	715,000
Cobalt ore	3 to 5	3,200	320,000	21,000	2,100,000
Copper ore	10	2,200	Not stated.	5,300	Not stated.
Gold ore	—	25	Not stated.	—	—
Lead ore (argentiferous) ...	—	200	Not stated.	—	—
Nickel ore	7·5	26,464	926,000	53,200	2,394,000
Total value in francs ...	—	—	1,446,000	—	5,209,000
„ „ £ sterling			£57,840		£208,360

Nicaragua.*

The exact output of the mines and alluvial diggings does not appear to be known. The exports are given in the table below.

TABLE 454.

Mineral.	1897.		1898.	
Gold (bars and dust) ...	Kilos. 1,120 Ozs. 36,000	£ 110,000	Kilos. 505 Ozs. 16,242	£ 53,726
Gold ore	—	—	Lbs. 8,791	60,000

Norway.†

The largest copper mines are those of Sulitelma and Röros, both of which also yield iron pyrites. The Kongsberg mines have long been famous for their native silver, which is sometimes met with in masses of considerable size, and the picked stuff sent to the smelting works contains from 78 to 86 per cent. of the precious metal. The amount of silver obtained by smelting, and derived almost entirely from Kongsberg, was 5,372 kilos., valued at 48,000 kroner in 1897. Mica is quarried, and then prepared for stoves, lamp-glasses, and electrical purposes. Marble and granite are likewise exports of Norway. Beds of infusorial earth are worked at Imbs.

There appears to be no official information about accidents in mines in Norway, similar to that which is given by the sister country.

* Consul Chambers, "Trade of Nicaragua for the Years 1897 and 1898." *Dipl. and Cons. Reports*, Nos. 2,136 and 2,329, Ann. Ser., 1898 and 1899 [C. 8,648-158, and C. 9,496].

† *Norges Officielle Statistik, Tredie Række No.* 285. *Tabeller vedkommende Norges Bergværksdrift i Aarene 1894, og 1895* Kristiania, 1898, and Consul-General Dundas, "Trade of Norway for the Year 1898." *Dipl. and Cons. Reports*, No. 2,299, Ann. Ser., 1899 [C. 9,044-125].

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NORWAY—*continued.*

TABLE 455.

PERSONS EMPLOYED at MINES during the Years 1897 and 1898.*

Kind of Mines.	1897.	1898.
Apatite	?	
Chrome ore	—	
Cobalt ore (dressed)	30	
Copper ore	1,133	
Felspar	?	
Gold	191	
Iron ore	150	
Iron pyrites (in part cupreous) ...	519	
Molybdenite	9	
Nickel ore	—	
Silver and silver ore	225	
Titanium ore (rutile)...	9	
Zinc ore	168	
Total	2,434	

TABLE 456.

QUANTITY and VALUE of MINERALS produced from MINES during the Years 1897 and 1898.*

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Kr.	Metric Tons.	Kr.
Apatite	872	48,000		
Chrome ore	—	—		
Cobalt ore (dressed)	24	10,000		
Copper ore	27,606	1,144,100		
Felspar	17,392	295,000		
Gold (fine)	Kilos. 1·266	2,500		
Iron ore	3,627	21,000		
Iron pyrites (in part cupreous) ...	94,484	1,445,000		
Manganese	—	—		
Molybdenite	2	3,000		
Nickel ore	—	—		
Silver (fine)	Kilos. 5,372	480,000		
Titanium ore (rutile)	32	20,000		
Zinc ore	908	27,000		
Total value in Kr.... ...	—	3,495,600		
„ „ £ sterling...	—	£192,066		

Orange Free State.

Coal.—The Orange Free State possesses a large area of the South African Coalfield, and its railways are already being supplied from its own collieries.

Diamonds.—Though not to be compared in yield with the great Kimberley workings, the Jagersfontein diamond mine takes the palm for the water of its gems. According to the last annual report† of the Jagersfontein Company, the average value of the diamonds found was 34*s.* 6*d.* per carat, whereas the amount realised at De Beers and Kimberley was only 26*s.* 6*d.* per carat.‡ The total yield of Jagersfontein mine for the financial year was 288,937 carats, worth £498,797.

* Official Return furnished by the Central Statistical Office, Kristiania. Figures for 1898 not yet available.

† *The New Jagersfontein Mining and Exploration Co., Ltd. Eleventh Annual Report and Accounts for the year ended 31st March 1899.* Kimberley, 1899.

‡ *De Beers Consolidated Mines. Tenth Annual Report for the year ended 30th June 1898*, p. 9.

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Paraguay.

Though many useful ores and minerals are said to exist in Paraguay, they still remain unworked.

Persia.*

The minerals of the country belong to the Government, and the mines are leased out to private persons. The Ministry of Mines has no account of the number of persons employed, nor of quantity and value of the minerals produced.

The mineral wealth of Persia is great, though it cannot be properly utilized at the present time owing to want of easy means of communication. Deposits of the following useful minerals are known to exist, viz :—alum, antimony ore, borax, coal, the ores of cobalt, copper, gold, iron, lead and manganese, petroleum, realgar, salt, saltpetre, silver-lead ore, sulphur, and turquoises.

Coal.—There are fine coal deposits† near Kerman and much iron ore of good quality on the slopes of the Elburz range and elsewhere.

Copper.—Rich deposits of copper are known.

Lead ore.—Argentiferous lead-ore is plentiful, but is worked in a primitive fashion.

Turquoises.—The annual rent paid for the turquoise mines‡ near Nishapur in Khorassan is £4,800, and the value of the gems produced must therefore considerably exceed that sum.

Peru.§

No exact data exist concerning the number of persons employed in mines ; but it is estimated at 100,000, including a few females.

The number of persons employed on the coast at the salt works, quarries, and petroleum wells is estimated at 5,000.

The principal minerals of Peru are borate of lime, coal, copper ore, gold, petroleum, salt, and silver ore.

Borate of lime.—Deposits of this mineral exist in various parts of the country, and new discoveries are being made. The most important workings at the present moment are those of Arequipa and Tacna.

Coal.—Extensive beds of anthracite and semi-bituminous coal are known in Peru. The principal coal centres are Cerro de Pasco, Ancach and Hualgayoc. The first produces 7,000 tons annually and the two latter 3,000 tons, or 10,000 tons in all. Some of the Peruvian coal contains vanadium. Besides coal, Peru possesses lignite and peat.

Copper ore.—Rich veins of copper ore exist in the Cerro de Pasco silver mines. The output is now about 9,000 tons a year, containing 3,000 tons of metal. The other mines of the country are estimated to yield about 500 tons of metal.

Gold.—The amount of gold obtained from alluvial deposits and quartz veins is small. The lode of the Santo Domingo mine in the province of Carabaya yielded about

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* Helmhacker, "The Mineral Resources of Persia," *Eng. Min. Jour.*, Vol. LXVI., 1898, p. 38, and *B. u. h. Zeitung*, Vol. LVIII., 1899, p. 272.

† *Berg-und hütt. Zeit.*, Vol. LVIII., 1899, p. 272.

‡ Consul General Temple, "Report on the Trade and Commerce of Khorassan for the Year 1897-98." *Dipl. and Cons. Reports*, No. 2202, Ann. Ser., 1899 [C. 9044-28].

§ Olaechea, *Apuntes sobre mineria en el Perú*, Lima, 1898.
El Comercio, Lima, 4 Dec. 1899.
" Estudio sobre la region aurifera de Santo Domingo en la provincia de Carabaya," *Boletin de Minas, Industria y Construcciones*, Ano XV., 1899, p. 57.
MS. communication from the " Escuela especial de Ingenieros," Lima, 1899.

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PERU—*continued.*

400 kilograms in the financial year 1898–9; but the means of communication are so difficult that the mineral resources of this rich auriferous district cannot be properly utilized.

Petroleum.—Great expectations are entertained of the future of the petroleum industry, though the output of the wells at the present time is only 9,000 tons a year.

Silver ore.—This is the principal mineral worked in Peru; the largest mines are at Cerro de Pasco. The output of silver has diminished considerably, on account of the drop in price of the metal.

Salt.—The production of salt, a Government monopoly, is an industry of importance.

Sulphur.—Deposits of sulphur are found in many of the extinct volcanoes.

TABLE 457.

MINERALS produced during the YEARS 1897 and 1898.

Mineral.	1897.	1898.
	Metric Tons.	Metric Tons.
Antimony (Exported)	45	29
Borates	27,500	—
Coal	—	10,000 (*a*)
Copper (Metal)	3,500	3,500 (*a*)
Gold (Fine)	Kilos. 767	Kilos. 1,000 (*a*)
Lead (Exported)	144	9
Petroleum { Crude	8,000	9,000 (*a*)
Petroleum { Refined	2,500	
Salt	17,938	18,000 (*a*)
Silver (Fine)...	Kilos. 163,816	Kilos. 165,000 (*a*)
Tin (Exported)	29	2

(*a*) Approximate output.

Philippine Islands.*

It has long been known that the mineral resources of these islands are very varied.

Coal.—Coal and lignite are found on many of the islands.

Copper.—Copper ore occurs in various places and has already been worked.

Gold.—Large quantities of gold have been extracted from alluvial deposits and quartz veins, and it seems likely that gold mining will become a prominent industry of the islands.

Iron and Lead.—Iron ore is found at least on three of the islands, and so is galena.

Petroleum and Natural Gas.—Mineral oil is known in Cebú, Panay, and Leyte, and Cebú has likewise natural gas.

* Day, "Mineral Resources of the Antilles, Hawaii and the Phillipines," *Eng. Mag.*, Vol. XVII., 1899, p. 242.

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Porto Rico.*

The island of Porto Rico possesses mineral resources which are not likely to remain undeveloped by its new owners.

Coal.—Coal has been found in the western part of the island and at Guatemala.

Copper.—The ores of copper are found in several places.

Gold.—From six to eight thousand pesos (dollars) worth of gold a year is panned out from the beds of creeks and rivers.

Gypsum.—This mineral is common.

Iron Ore.—There are valuable deposits of iron ore, especially north of Juncos.

Lignite and Peat.—There is an abundance of these two minerals.

Phosphate of Lime.—Phosphate rock is everywhere abundant. It has been worked on the islet of Mona in the San Domingo Channel, and about 9,000 tons were exported to Europe in 1894.

Salt.—Rich deposits of salt are known in several places.

Portugal.†

The deposit of copper-bearing pyrites at San Domingos, in Southern Portugal, furnishes most of the mineral wealth of the country at the present time.

TABLE 458.

PERSONS EMPLOYED at MINES during the Years 1897 and 1898.

Kind of Mines.	Under-ground.			Above-ground.			Total Under and Above Ground.
	Males.	Females.	Total.	Males.	Females.	Total.	
Coal	322	—	322	193	37	230	552
Iron ore	23	—	23	22	—	22	45
Other mines ...	1,131	—	1,131	1,844	272	2,116	3,247
Total for 1898	1,476	—	1,476	2,059	309	2,368	3,844
Total for previous year	1,299	—	1,299	1,717	430	2,147	3,446

TABLE 459.

PERSONS EMPLOYED at QUARRIES during the Year 1890.‡

Under-ground.			Above-ground.			Total Under and Above Ground.
Males.	Females.	Total.	Males.	Females.	Total.	
419	—	419	4,240	57	4,297	4,716

* Day, "Mineral Resources of the Antilles, Hawaii and the Philippines." *Eng. Mag.*, Vol. XVII., 1899, p. 242.—"Zur geologie der Insel Mona in West-Indien," *Berg- und hüttenmannische Zeitung*, Vol. LVIII., 1899, p. 337.—Domenech "Porto Rico; her Mineral Resources," *Mines and Minerals*, Vol. XIX., 1899, p. 529.

† Official Return furnished by the Portuguese Government.

‡ No later return available.

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PORTUGAL—*continued.*

TABLE 460.

QUANTITY of MINERALS produced during the Years 1897 and 1898.

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Dollars.	Metric Tons.	Dollars.
Antimony ore	417	28,073	245	6,237
Arsenic { crude	269	6,103	—	—
Arsenic { refined	256	14,855	751	41,448
Arsenical pyrites	20	216	—	—
Coal { Anthracite	7,996	48,776	10,250	34,289
Coal { Lignite	9,342	22,421	12,291	48,756
Copper ore	241	5,986	290	11,851
Copper precipitate	3,304	540,290	3,149	494,056
Cupreous iron pyrites	66,473	235,368	54,368	123,981
Gold	kilos. 17	11,691	kilos. 6·8	4,340
Iron ore	—	—	2,519	3,023
„ „ (manganiferous)	—	—	883	2,540
Iron pyrites	210,265	412,960	248,218	339,128
Lead ore	2,180	65,785	3,242	93,037
Manganese ore	1,652	17,242	907	2,402
Silver	kilos. 79	1,890	kilos. 119·5	2,187
Tin	1	406	—	—
Tin ore	8	1,955	102	21,554
Wolfram...	29	6,733	59	15,476
Total value in dollars ...	—	1,420,750	—	1,244,305
„ „ £ sterling ...	—	£218,577	—	£191,432

TABLE 461.

DEATHS from ACCIDENTS at MINES during the Years 1897 and 1898.

Year.	Under-ground.			Above-ground.			Total Under and Above Ground.	Death-rate per 1,000 Persons Employed.
	Males.	Females.	Total.	Males.	Females.	Total.		
1897	—	—	—	—	—	—	—	—
1898	1	—	1	—	—	—	1	·26

There were seven deaths from accidents in quarries during the year 1890, giving a death-rate of 1·48 per 1,000 persons employed in that year.

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Portuguese East Africa.

Coal, gems, and gold are said to have been discovered in the district of Lourenço Marques,* and on Inyack Island close to Delagoa Bay. Coal has also been found on the Catembe River, some 40 miles from Lourenço Marques, and much prospecting is going on.

Dr. Carl Peters has lately shown that gold exists and has been worked in Macombe's country, south of the Zambesi, and he gives many excellent reasons for supposing that this district is the Ophir of Scripture.†

Prussia. (*See* GERMAN EMPIRE.)

Roumania.‡

The minerals worked in Roumania are lignite, petroleum, rock salt, and stone.

Lignite.—Lignite is found in very many parts of the country, and the beds are sometimes as much as 20 feet thick; but lignite mining is at present in its infancy. The largest mines are at Margineanca, and are worked by the State; they produce 51,000 tons yearly. Great hopes are based upon the utilization of lignite by making it into briquettes with petroleum residues; the fuel so produced is of excellent quality and is cheaper than Welsh coal.

Petroleum.—Petroleum is, and probably always will be, the mainstay of the mining industry in Roumania. The oil-bearing regions are shown on maps in the reports of M. Rommenhöller§ and Mr. Sutherland.‖ The illustrated pamphlet of the latter author affords an excellent account of the present state of the petroleum industry. The total output in 1898 was 180,000 metric tons, obtained partly from shallow hand-dug wells and partly from bore-holes. The Prahova district yields more petroleum than any other at the present time. The official statistics¶ show that there are 68 productive bore-holes and 882 productive wells. The deepest bore-hole is only 550 metres deep, whilst the wells are often only 20 to 100 metres deep. According to M. Alimanestiano, who is Chief of the Mining Department, the most pressing need of the petroleum industry is the establishment of a pipe-line from the wells to the Danube, or even to Costantza. Given cheap transport, Roumania could supply central Europe with oil at lower prices than any of its competitors.

Salt.—The salt industry is a Government monopoly, and much of the work in the rock salt mines is carried on by convict labour. About 22,000 tons of rock salt are exported annually to Turkey and 3,000 to Russia. M. Alimanestiano is of opinion that the export trade might be extended with profit to Africa and even India.

Stone.—Roumania has hitherto been largely dependent upon the foreigner for stone and building materials generally, though ample supplies exist in the country itself, especially in the Dobrudja. However, the paving stones from Belgium and France have now been to some extent ousted by native products, in spite of the difficulties which beset the Roumanian quarry-owner in the shape of expensive transport and want of trained workmen. As these obstacles disappear, quarrying may be expected to become an important industry in the country.

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* *Zeitschr. f. prakt. Geol.*, 1899, p. 267, and Despatch from H.M. Minister at Lisbon to Foreign Office. Consul Ross, "Trade of Lourenço Marques and District for the year 1898." *Dipl. and Cons. Reports*, No. 2235, Annual Series, 1899 [C. 9044-61].

† *Jour. Soc. Arts*, vol. xlviii, 1900, p. 343.

‡ Alimanestiano, "L'Exploitation des Mines en Roumanie." *Courrier de Roumanie*, Nos. 4, 5, and 6; Bucharest, 1898–99; and "Der Bergbau Rumäniens," *Allgemeine bergmännische Zeitschrift*, No. 5, 1899, p. 16.

§ Rommenhöller, *La Roumanie*. Rotterdam, 1898.

‖ "The Petroleum Industry of Roumania," reprinted from the *Petroleum Review*, April 1899.

¶ *Statistica Industriei Miniere din tara (Afara de Cariere) de la 1 Julie 1897—30 Junie 1898*; Bucharest, 1899, p. 58.

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ROUMANIA—*continued.*

There are already five important granite quarries in the Dobrudja, and the total number of quarries in the country is shown by the official statistics* to be very considerable.

For centuries the alluvia of many of the rivers have been known to carry gold, and a little of the precious metal is occasionally washed from the sands by the peasantry; but the gold resources of Roumania are as yet unknown. The same may be said of the ores of cobalt, copper, manganese, and iron, and of the beds of anthracite and coal, which have been found cropping out in various parts of the country.

TABLE 462.

OUTPUT of MINERALS during the Years 1897 and 1898.†

Mineral.	1897.		1898.	
	Metric Tons.	Value.	Metric Tons.	Value.
		Leï.		Leï.
Lignite	18,000	180,000	67,000	562,000
Petroleum	80,000	2,700,000	180,000	4,400,000
Salt	112,650	(Monopoly.)	108,079	(Monopoly.)
Stone	7,500,000	5,800,000	8,100,000	6,700,000
Total value in Leï	—	8,680,000 (*a*)	—	11,662 000 (*a*)
„ „ £ Sterling ...	—	£347,200	—	£466,480

(*a*) Excluding value of salt.

Russia.

Whether judged by the number of persons employed, or by the value of the products obtained, the workings in Russia for coal, gold, iron ore, manganese ore, petroleum, platinum, and salt, are worthy of much attention.

Coal.—The quantity of coal raised in Russia has risen very considerably of late, for the total output in 1882 was $3\frac{3}{4}$ million tons, and $9\frac{1}{3}$ million tons in 1896. The most productive coal region of Russia is the Donetz basin, in the province of Ekaterinoslav, which yields anthracite and bituminous coal. Next in importance comes Poland with true coal and brown coal. These two sources produce about two-thirds of the coal of Russia.

Coal and lignite have been found in many places along the line of the Trans-Siberian Railway now in course of construction.

The coal of Saghalien is being worked on a large scale, and is used for steamships.

Copper.—Most of the copper of Russia comes from the Urals and the Caucasus.

* *Statistica Carierelor din téra, 1897*; Bucharest, 1898.
† Official Return furnished by the "Département de l'Agriculture, du Commerce, de l'Industrie et des Domaines," Bucarest.

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RUSSIA—*continued.*

Gold.—The gold is derived mainly from alluvial deposits in the Urals, and in Eastern and Western Siberia; the localities where it is being worked are shown upon a useful map prepared by M. de Batz.*

Iron and steel.—The iron and steel industry of Russia † is making rapid progress, which is evident from a comparison between 1882 and 1896 :—

TABLE 463.

Year.	Quantity Produced.		
	Pig Iron.	Wrought Iron.	Steel.
	Metric Tons.	Metric Tons.	Metric Tons.
1882	462,295	298,361	247,541
1896	1,622,142	498,453	1,023,118
1897	1,868,564	501,819	?

Manganese ore.‡—The output of the manganese mines of Chiatur in the Caucasus shows an increase of 73,000 tons, and reached altogether 282,316 tons, Germany taking 102,000 and England nearly 80,000 tons.

Petroleum.‡—The production of the oil wells near Baku continues to increase, the total output being 48,596,851 barrels in 1898 against 42,246,073 barrels in the previous year. The Sabounchi field was the most productive of the four oil-fields near Baku. In the four districts there were in 1898 altogether 1,623 wells at which work was going on; 848, or more than half, were producing, whilst the remainder were either being bored, deepened, cleared out, or prepared. The average depth of the producing wells in 1898 was 735 feet on the Balakhany field, 980 on the Sabounchi, 1,281 on the Romany, and 1,344 on the Bibi-Eibat.

Platinum.—All the platinum is obtained from alluvial deposits in the Urals.

Quicksilver.—All the quicksilver is obtained in the district of Ekaterinoslav in South Russia; the deposits were first worked in 1885.

Salt.—More than half the salt is a harvest from lakes, especially in Astrakhan and the Crimea. Much salt is obtained by evaporating brine pumped up from boreholes, and some by mining beds of rock-salt.

In western Siberia salt is obtained from a number of lakes which partially dry up in summer and in hot years deposit crusts of salt from two to four inches thick. The great Burlinsk lake yields 20,000 tons yearly in this fashion.§

In eastern Siberia the salt is obtained from springs, and from deposits of rock salt.§

Sulphate of sodium.—The great Marmischanski Lake in the Government of Tomsk is estimated to contain more than a million tons of sulphate of sodium; about 1,600 tons are obtained from it annually, and some of it is used for making soda.§

Sulphur.‖—Native sulphur occurs in various parts of the Empire; it is worked in Daghestan and at Czarkowsky, in the Government of Kielce, near the Austrian frontier.

Zinc ore.—The zinc ore is obtained from deposits of calamine in Poland.

* "The auriferous deposits of Siberia," *Trans. Am. Inst. M.E.*, Vol. XXVIII., 1898.
† Official return furnished by the Department of Mines, St. Petersburg.
‡ Consul Stevens, "Trade of Batoum and District for the year 1898." *Dipl. and Cons. Reports*, No. 2264, Ann. Ser., 1899 [C. 9044—90].
§ Thiess, "Die Salzgewinnung in Siberien." *Zeitschr. B. H. Salinenwesen*, Vol. XLVI., 1898, p. 249.
‖ Consul-General Murray, "Trade of Warsaw and District for the year 1897." *Dipl. and Cons. Reports*, No. 2135, Ann. Ser., 1898 [C. 8648—157].

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RUSSIA—*continued.*

TABLE 464.

PERSONS EMPLOYED at MINES and other MINERAL WORKINGS during the Years 1896 and 1897.*

Year.	Under-ground.	Above-ground.	Total.
1896	82,843	156,591	239,434
1897†			

TABLE 465.

PERSONS EMPLOYED at the PRINCIPAL KINDS of MINES and other MINERAL WORKINGS during the Years 1896 and 1897.*

Kind of Mineral worked.	Persons Employed during the Year.	
	1896.	1897.†
Coal	53,530	
Copper ore	3,263	
Gold	72,508	
Iron ore	38,210	
Manganese	2,562	
Naphtha	11,727	
Platinum	6,981	
Salt	16,338	
Silver-lead ore	1,915	

TABLE 466.

PERSONS EMPLOYED at GOLD MINES during the Years 1896 and 1897.*

Year.	Number of Persons Employed.				
	Urals.	West Siberia.	East Siberia.	Finland.	Total.
1896	33,415	8,057	30,965	71	72,508
1897†					

* Official return furnished by the Department of Mines, St. Petersburg.
† Figures for 1897 not yet available.

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RUSSIA—*continued.*

TABLE 467.

QUANTITY and VALUE of MINERALS produced during the Years 1896 and 1897, and the QUANTITY only for 1898.*

Mineral.	District whence Obtained.	1896.		1897.†		1898.‡
		Quantity.	Value.	Quantity.	Value.	Quantity.
		Metric Tons.	Roubles Silver.	Metric Tons.	Metric Tons.	Roubles Silver.
Asbestos	Ural	1,275	20,000	—		
Asphalt and mineral pitch	Syzran, Caucasus	18,188	332,853	—		
China clay	Volyn, Chernigov	6,104	60,000	—		
Chrome ore	Perm, Orenburg, Oufa	6,687	40,790	—		
Coal: Anthracite	Donetz, Poland, Moscow, Ural, Kutais, Turkestan, Tomsk, Kirgniz Steppe, Saghalien, Oussonry.	796,446	31,435,009	11,207,475		
Coal: Coal		8,527,994				
Coal: Lignite		60,806				
Cobalt ore and regulus	Caucasus	4¼	—	—		
Copper	Ural, Western Siberia, Caucasus, Finland.	5,901	3,560,190	6,567		
Gold	Ural, Eastern and Western Siberia, Lapland.	*Kil.* 37,240	42,073,942	*Kil.* 38,129		
Iron: Pig iron	Ural, Central Russia, Poland, Southern Russia, Northern Russia, Siberia, Finland.	1,622,142	62,178,700	1,868,564		
Iron: Wrought iron	Ditto ditto	498,453	—	—		
Iron: Steel	Ditto ditto	1,023,118	—	—		
Iron pyrites	Ural, Toula, Novgorod	13,200	80,500	—		
Lead	Tomsk, Transbaikal, Kirghiz Steppe, Caucasus, Turkestan.	261	30,000	—		
Manganese ore	Kutais, Ural, Ekaterinoslav	208,197	1,184,323	366,808		
Petroleum	Caucasus, Transcaspian, Turkestan.	7,066,232	33,621,136	7,855,582		
Phosphorite	Bessarabia, Kostroma, Podolia, Smolensk.	3,780	23,000	—		
Platinum	Ural	*Kil.* 4,934	2,408,000	*Kil.* 5,606		
Quicksilver	Ekaterinoslav	492	1,050,000	616½		
Salt: Rock salt	Astrakhan, Perm, Ekaterinoslav, Crimea, Kharkov, Orenburg, Tomsk, Caucasus, &c.	340,421	7,565,000	1,526,622		
Salt: Lake salt		652,433				
Salt: Salt from brine		354,498				
Silver	Tomsk, Transbaikal, Kirghiz Steppe, Caucasus, Finland.	*Kil.* 7,819	568,000	—		
Sulphate of sodium	Tiflis, Kuban, Tomsk, Vologda.	5,415	28,600	—		
Sulphur	Daghestan, Poland, Turkestan	437	14,000	—		
Tin	Finland	2	1,190	—		
Zinc	Poland	6,261	1,145,000	5,879		
	Total value in roubles	—	187,420,233	—		—
	„ „ £ sterling		£29,749,243			

TABLE 468.

QUANTITY of IRON ORE produced in each District in 1896 and 1897.*

Region.	1896.		1897.§	
	Number of Mines.	Quantity produced.	Number of Mines.	Quantity produced.
		Metric Tons.		Metric Tons.
Urals	651	1,346,273		
Central Russia	78	173,142		
South Russia	40	1,258,797		
Poland	109	296,482		
Siberia	10	27,594		
North Russia	7 and 22 lakes	22,903		
Finland	2 „ 129 „	75,631		
Caucasus	4	5,179		
Total	901 and 151 lakes	3,206,001		

* Official returns furnished by the Department of Mines, St. Petersburg.
† Preliminary data subject to revision.
‡ Figures for 1898 not yet available.
§ „ „ 1897 „

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RUSSIA—*continued.*

TABLE 469.

DEATHS from ACCIDENTS at the MINES and other WORKINGS for MINERALS during the Years 1895 and 1896.*

Year.	Number of Deaths.	Death-rate per 1,000 Persons Employed.
1895	233	0·96
1896		

Sandwich Islands.†

The mineral industries of the Sandwich Islands are of slight importance. There are large deposits of gypsum, and red and yellow ochre; sulphur is found around the volcanoes.

The extraction of salt from sea water is carried on to supply local wants.

Saxony. (*See* GERMAN EMPIRE.)

St. Martin. (*See* DUTCH WEST INDIES.)

Senegal.‡

Alluvial deposits of gold exist in various parts of Senegal, and especially in the valley of the Falemé river, where the metal is extracted on a small scale by the natives. In 1898, 129 kilograms of gold valued at £15,464 were exported.

Servia.§

Servia is richly endowed with mineral wealth, but until new railways have been constructed and the existing cart roads improved‖ it is idle to expect that it will become a great mining country.

Coal.—Most of the coal region lies near the Danube, which enables the mineral to be shipped down the river to districts requiring fuel and to the Black Sea. The most important workings are in the neighbourhood of Posarevatz.

True coal, said to be almost as good as English coal, occurs and is worked in the Timok Valley near Tschuka.¶

Gold.—Gold was worked in Servia by the Romans, and a little gold mining is carried on at the present day.

* Official return furnished by the Department of Mines, St. Petersburg. Figures for 1896 not yet available.

† Day, "Mineral Resources of the Antilles, Hawaii, and the Philippines," *Eng. Mag.* Vol. XVII., 1899, p. 242.

‡ Consul Arthur, "Trade of Senegal and Dependencies for the year 1898." *Dipl. and Cons. Reports*, No. 2372, Ann. Ser. 1900 [Cd. 1-9], and *Min. Jour.*, Vol. LXVIII., 1898, p. 221.

§ Official return furnished by the Mining Department of the Ministry of Agriculture, Commerce, and Industry, Belgrade.

‖ Consul Macdonald "Trade of Servia for the years 1897-98." *Dipl. and Cons. Reports*, No. 2207, Ann. Ser. 1899 [C. 9044-38].

¶ *Berg-und huett. zmaennische Zeitung*, Vol. LV., 1896, p. 299.

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SERVIA—*continued.*

TABLE 470.

PERSONS EMPLOYED at MINES during the Years 1895 and 1896.

Year.	Under and Above-ground.
1895	1,391
1896	1,433

In addition to the above, there were 120 persons employed in and about quarries.

TABLE 471.

QUANTITY and VALUE of MINERALS produced during the Years 1895 and 1896.

Mineral.	1895.		1896.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Francs.	Metric Tons.	Francs.
Antimony (regulus)	48	33,281	—	—
Brown coal	41,008	238,007	50,635	470,946
Coal...	1,426	53,107	11,726	90,020
Copper (metal)	156	18,579	113	141,432
Lead do.	7	2,948	462	19,879
Lignite	19,537	100,046	24,705	127,912
Millstones	619	21,600	855	37,600
Zinc ore	8	?	—	—
Total value in francs ...	—	467,568	—	887,789
„ „ £ sterling ...	—	£18,703	—	£35,511

TABLE 472.

DEATHS from ACCIDENTS at MINES during the Years 1895 and 1896.

Year.	Number of Deaths.	Death-rate per 1,000 Persons Employed.
1895	4	2·88
1896	4	2·79

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Siam.*

Siam produces gems, gold, and tin ore. The gems, rubies and sapphires, are obtained from shallow diggings on the flanks of the Patat range in the Cambodian peninsula. The gem pits afford employment to five or six thousand Shans and Laos, and the value of the output is estimated to be about £300,000 annually. Alluvial gold exists and has been worked in many parts of Siam, notably near Lophburi; reef-mining has been carried on at Kabin and Wattana, and the former mine is already producing 200 ozs.† a month. A larger output will soon be forthcoming when the new crushing machinery has been erected.

The tin mines of the State are chiefly situated in the Siamese Malay Provinces, along the edge of the granites of the main ridge which forms the watershed of the Peninsula. The total annual output of metallic tin may be estimated at about 4,000 tons, giving employment to over 15,000 persons, mostly Chinese. The royalty on tin has now been reduced to 10 per cent. of the output, and this will enable a certain number of mines, which would not pay under the old royalty, to be re-worked.

Singkep. (*See* DUTCH EAST INDIES.)

Somaliland.‡

This country is said to possess workable deposits of the precious metals.

Soudan. (*See* EGYPT.)

South African Republic.§

The South African Republic is now the greatest gold-producing country of the world, and its mineral resources are by no means confined to the precious metal; it is also yielding coal, diamonds, silver-lead ore, and tin ore; whilst the ores of antimony, cobalt, copper, mercury, and zinc are known to exist.

Coal is worked chiefly in the Boksburg district, and the output is increasing gradually.‖ There are also good indications of coal in Swaziland.¶

Diamonds.—There are alluvial diggings close to Christiana, and a "pipe" of "blue ground" similar to that of Kimberley has been discovered at Rietfontein, near Pretoria. The number of persons engaged in seaching for diamonds is rapidly increasing.

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* M.S. communication from H. Warington Smyth, and Bel, "Aperçu sur les gites minéraux de l'Indo-Chine Centrale." *Bull. Soc. Ind. Min.*, Vol. XII., 1898, p. 384.

† Vice-Consul Black, "Trade of Bangkok and District for the year 1897." *Dipl. and Cons. Reports*, No. 2,190, Ann. Ser., 1898 [C. 9044–16], and Consular-Assistant Carlisle, "Ibid. for 1898" [C. 9496-24].

‡ *Manchester Guardian*, 14 September 1899.

§ *Rapport van het Hoofd van Mijnwezen over het Jaar, 1898*, Pretoria, 1899; and translation: *Report for the year ending 31st December 1898, as presented by the State Mining Engineer to the Government of the South African Republic*, Pretoria, 1899.

‖ Peile, "Transvaal Coalfield." *Trans. Inst. M.E.*, Vol XVI., 1898, p. 20, with a map.

¶ Consul Smuts, "Report for the year 1896 on the Trade, &c., of Swaziland." *Dipl. and Cons. Reports*, No. 1,996, Ann. Ser., 1897 [C. 8648–18].

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SOUTH AFRICAN REPUBLIC—*continued.*

Gold.—The following table shows the progress of the gold mining industry since 1884. During the past five years the output has been more than doubled.

TABLE 473.

Year.	Value in £ sterling.	Increase on Previous Year £ sterling.
1884	10,096	—
1885	6,010	—
1886	34,710	28,700
1887	169,401	134,691
1888	967,416	798,015
1889	1,490,568	523,152
1890	1,869,645	379,077
1891	2,924,305	1,054,660
1892	4,541,071	1,616,766
1893	5,480,498	939,427
1894	7,667,152	2,186,654
1895	8,569,555	902,403
1896	8,603,821	34,266
1897	11,653,725	3,049,904
1898	16,240,630	4,586,905
Total	70,228,603	—

The total output of fine gold in 1898, as calculated from the value, was 3,830,337 ozs., exceeding that of the previous year by 1,081,817 ozs., worth £4,586,905. The increase is largely due to the additional number of stamps at work, and to improved appliances for the treatment of slimes at a number of the mines.

The Witwatersrand goldfield, with its remarkable beds of auriferous conglomerate, contributed 93·2 per cent. of the total for 1898.

Gold mining is being carried on successfully in Swaziland.

Silver-lead ore.—Judging by the output of only 80 tons of ore, lead mining is not flourishing.

Tin ore.—Tin has been produced from alluvial deposits on the Ryan Concession, Swaziland. The total output was 22·7 tons of clean tin ore containing 75 per cent. of metal.

The following tables show the vast importance of the mining industry of the South African Republic:—

TABLE 474.

PERSONS EMPLOYED at all the GOLD MINES in 1897 and 1898.

Year.	Under-ground.			Above-ground.			Total Under and Above-ground.
	Whites.	Natives.	Total.	Whites.	Natives.	Total.	
1897	7,961	62,009	69,970	1,569	7,118	8,687	78,657
1898	8,664	73,063	81,727	2,037	9,042	11,079	92,806

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SOUTH AFRICAN REPUBLIC—*continued.*

TABLE 475.

PERSONS EMPLOYED at COAL MINES in 1897 and 1898.

Year.	Under-ground.		Above-ground.		Total Under and Above-ground.	
	Whites.	Natives.	Whites.	Natives.	Whites.	Natives.
1897	159	3,917	313	2,744	472	6,661
1898	121	4,212	270	2,689	391	6,901

TABLE 476.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	£	Metric Tons.	£
Coal	1,6 5,892	612,668	1,938,424	668,346
Diamonds	carats 5.792	11,500	carats 22,843	43,730
Gold	kilos. 85,488 / ozs. 2,748,520*	11,653,725	kilos. 119,136 / ozs. 3,830,337*	16,240,630
Silver-lead ore	254	Not given.	81	500
Tin ore	70	2,760	23	1,800
Total value	—	12,280,653	—	16,955,006

About two-thirds of the total value of the gold were obtained from the stamp mills, and one-third by chemical means, such as the cyanide, chlorination, and other processes. The cyanide process was applied not only to tailings and concentrates, but also to 131,186 tons of ore pulverised and treated directly.

TABLE 477.

QUANTITY and VALUE of FINE GOLD produced during the Years 1897 and 1898.

How obtained.	1897.			1898.		
	Quantity.		Value.	Quantity.		Value.
	Ozs.	Kilos.	£	Ozs.	Kilos.	£
Free gold in milling	1,807,025	56,205	7,661,786	2,515,893	78,253	10,667,385
Chemical treatment :—						
Tailings	722,652	22,477	3,064,044	1,039,832	32,342	4,408,889
Concentrates	118,069	3,672	500,612	149,971	4,665	635,877
Slimes	(*a*)	—	—	72,855	2,266	308,908
Dry process	29,168	907	123,673	31,533	981	133,701
Miscellaneous	70,995	2,208	301,018	19,109	594	81,023
From alluvial deposits	611	19	2,592	1,144	35	4,847
Total	2,748,520*	85,488	11,653,725	3,830,337*	119,136	16,240,630

(*a*) Included with miscellaneous.

* Quantity estimated from the value, taking 1 oz. of fine gold as worth 84·8*s*.

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SOUTH AFRICAN REPUBLIC—*continued.*

TABLE 478.

DEATHS from ACCIDENTS at COAL MINES and GOLD MINES during the Years 1897 and 1898.

Kind of Mines.	1897.		1898.	
	Number of Deaths from Accidents.	Death-rate per 1,000 Persons Employed.	Number of Deaths from Accidents.	Death-rate per 1,000 Persons Employed.
Coal	30	4·21	27	3·70
Gold	339	4·31	404	4·35

In speaking last year of South Africa, I mentioned several reasons why the death-rates from accidents at the diamond and gold mines were higher than those at home. A further contributory cause in the case of the South African Republic should be mentioned, viz., drink. The fearful amount of drunkenness which prevails among the natives is apparent from the following paragraph in the last Annual Report of one of the Gold Mining Companies.* "The illicit drink traffic during the year has again greatly hampered the Company's operations. With such ease is drink obtained that an average of about 25 per cent. of the natives, which this Company has to house and feed, are daily incapacitated."† Under *these* circumstances the task of the mine manager in endeavouring to prevent accidents *must* be considerably increased.

TABLE 479.

DEATHS from ACCIDENTS at COAL MINES, classified according to CAUSE of ACCIDENT, during the Years 1897 and 1898.

Cause of Accident.	1897.			1898.		
	Persons Killed.			Persons Killed.		
	White.	Native.	Total Number of Deaths.	White.	Native.	Total Number of Deaths.
Ascent or descent in cages or skips	—	3	3	—	2	2
Explosives	—	2	2	—	2	2
Falling in shafts	—	3	3	—	1	1
Falls of rock (in stopes, &c.)	—	16	16	—	16	16
Machinery	1	3	4	1	1	2
Trucks and tramming	—	2	2	—	3	3
Miscellaneous	—	—	—	1	—	1
Total	1	29	30	2	25	27

* *The Block B Langlaate Estate Gold Mining Company, Limited, Witwatersrand, S.A.R. Tenth Annual Report and Statement of Accounts for the year ending 31st December, 1898*, p. 6.

† This remark, written early in September, receives ample confirmation from an affidavit made by Mr. E. P. Rathbone, formerly Chief Inspector of Mines to the Transvaal Government, and published in "*The Times*" of 19th October last. He says, "I traced a large number of the accidents causing loss of life to the illicit sale of liquor, which was sold to the natives employed in the mines.

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SOUTH AFRICAN REPUBLIC—*continued.*

TABLE 480.

DEATHS from ACCIDENTS at all the GOLD MINES, classified according to CAUSE of ACCIDENT, during the Years 1897 and 1898.

Cause of Accident.	1897. Persons Killed. White.	Native.	Total Number of Deaths.	1898. Persons Killed. White.	Native.	Total Number of Deaths.
Ascent or descent in cages or skips	12	62	74	13	58	71
„ „ by ladders	—	4	4	—	6	6
Boilers	—	—	—	—	5	5
Explosives	11	42	53	18	69	87
Falling in shafts	6	30	36	8	69	77
Falling materials, &c. (in shafts, &c.)... ...	2	4	6	3	15	18
Falls of rock (in stopes, &c.)	—	61	61	7	75	82
Machinery	4	20	24	4	22	26
Suffocation by gases	9	48	57	2	3	5
Trucks and tramways	1	13	14	1	17	18
Miscellaneous	1	9	10	2	7	9
Total	46	293	339	58	346	404

The most serious individual accident during the year 1898 happened at the Crown Deep Mine, and involved the loss of 12 lives. It was caused by the draw-bolt breaking and the cage falling to the bottom of the shaft, a depth of 1,000 feet.

Spain.*

Spain is justly celebrated for its mineral wealth. It produces more cupreous pyrites than any other country in the world, and very large amounts of lead ore and quicksilver; its iron ores are abundant and of excellent quality, and it has lately become an important supplier of manganese ores.

In spite of its wonderful resources, the total number of persons employed in and about mines in Spain is only 75,000.

Coal.—The coal industry of Spain is growing; most of the coal comes from the province of Asturias.

Copper.—The Rio Tinto mines and its neighbours show no signs of impoverishment, for the output of the province of Huelva was 2,229,595 tons. Compared with this figure, the production of the other copper-bearing provinces, such as Seville, Murcia, Almeria, Oviedo, &c., is small.

Gold.—Mines are being successfully worked in the province of Corunna.†

Iron Ore.—As had been foreseen, the output of iron ore shows a decided decrease; this is owing to the falling off of the Bilbao mines which yield about 70 per cent. of the total output of the kingdom. Other sources of supply are being requisitioned to make up for the deficiency of the province of Biscay, and Santander already has an output of nearly 800,000 tons.

Lead.—Most of the lead comes from the provinces of Jaen and Murcia; much of the ore, and especially that of Murcia, contains a notable amount of silver.

* Consul Harrison. "Trade of Spain for the Year 1898." *Dipl. and Cons. Reports*, No. 2,245, Ann. Ser., 1899 [C. 9044-71].
† Consul Talbot, "Trade of Corunna and District for the Year 1898." *Dipl. and Cons. Reports*, No. 2,216, Ann. Ser., 1899 [C. 9044-42].

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SPAIN—*continued.*

Manganese Ore.—Mining for manganese, comparatively speaking a new industry, and almost entirely confined to the province of Huelva, has increased with great rapidity. The output of the province jumped from 7,321 tons in 1894 to 101,861 last year. Belgium absorbed more than nine-tenths of the new source of supply.

Quicksilver.—From time immemorial the Almaden mine in the province of Ciudad Real has been renowned as a producer of cinnabar.

Salt.—Most of the salt is obtained from salt marshes, especially in the vicinity of Cadiz. Rock salt is obtained from the mines of Ibiza and Torrevieja.

Tin.—The tin industry is of little importance.

Zinc.—Stimulated by higher prices, the zinc mines increased their output very considerably. Murcia is the principal zinc-producing province, though Santander, Almeria, and Cordova contain important zinc mines.

TABLE 481.

PERSONS EMPLOYED at MINES during the Years 1897 and 1898.*

Year.	Men.	Women.	Boys.	Total.
1897	55,881	2,430	7,684	65,995
1898	64,060	2,529	8,694	75,283

TABLE 482.

PERSONS EMPLOYED in the PRINCIPAL MINING INDUSTRIES during the Years 1897 and 1898.*

Kind of Mines.	1897.				1898.			
	Men.	Women.	Boys.	Total.	Men.	Women.	Boys.	Total.
Brown coal (lignite) ...	508	21	99	628	664	32	112	808
Coal and anthracite ...	11,765	928	2,256	14,949	13,915	991	2,381	17,287
Copper ore and cupreous pyrites.	7,340	184	886	8,410	7,284	191	873	8,348
Iron ore	15,895	151	1,371	17,417	17,757	112	1,613	19,482
Lead ore	13,268	498	2,021	15,787	17,135	521	2,528	20,184
Quicksilver ore	1,874	2	149	2,025	1,884	2	170	2,056
Zinc ore	1,225	159	138	1,522	1,555	148	274	1,977
Other mines	4,006	487	764	5,257	3,866	532	743	5,141
Total	55,881	2,430	7.684	65,995	64,060	2,529	8,694	75,283

* *Estadistica Minera de España al año 1897* and *ibid. 1898*, Madrid. p. 24.

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SPAIN—*continued.*

TABLE 483.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.*

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Pesetas.	Metric Tons.	Pesetas.
Aluminous earths	409	10,232	505	12,627
Anthracite	8,758	78,725	20,105	180,950
Antimony ore	354	33,590	130	10,743
Arsenical Pyrites	—	—	230	2,875
Asphalt (rock)	1,656	16,562	2,383	23,860
Barium sulphate	429	12,245	364	10,370
Brown coal	54,232	270,133	66,422	466,548
China clay	6,294	33,585	5,445	27,592
Coal	2,010,960	17,048,179	2,414,127	20,736,665
Cobalt ore	13	17,000	—	—
Copper ore	18,488	179,612	2,973	142,440
Cupreous iron pyrites	2,161,182	10,624,464	2,299,444	13,676,305
Fluor spar	2	180	5	375
Gold ore	450	9,250	555	10,825
Gold and silver ore	2,006	40,116	—	—
Graphite	—	—	10	90
Iron ore	7,419,768	27,286,637	7,197,047	31,162,419
Iron pyrites	100,000	250,000	70,265	175,675
Lead ore	110,469	10,293,057	150,472	24,740,278
Lead ore, argentiferous	186,692	18,675,064	244,068	40,118,859
Lead and zinc ores	40	200	38	192
Manganese ore	100,566	681,251	102,228	1,715,227
Mineral waters	16,180,585	579,368	15,610,222	611,324
Ochre	200	4,000	200	4,000
Phosphorite	2,084	83,360	4,500	225,015
Quicksilver ore	32,378	6,642,215	31,361	6,260,121
Salt	508,606	5,796,472	479,372	5,128,552
Silver ore	982	508,984	767	530,469
Silver ore, ferruginous	5,559	96,734	24,190	341,078
Steatite	3,601	106,704	2,613	72,518
Sulphur rock	18,845	162,938	105,757	990,688
Tin ore (undressed)	2,378	28,974	4	2,340
Topaz	kilos. 44	3,755	kilos. 399	7,268
Tungsten ore (Wolfram)	10	1,545	37	26,625
Zinc ore	73,848	1,819,230	99,836	4,956,929
Total values in Pesetas	—	101,394,361	—	152,371,842
„ „ „ £ sterling	—	£4,055,774	—	£6,094,874

TABLE 484.

DEATHS from ACCIDENTS at MINES during the Years 1897 and 1898.†

Year.	Number of Deaths by Accidents.	Number of Persons seriously Injured.	Death-rate per 1,000 Persons Employed.
1897	142	258	2·15
1898	214	274	2·84

* *Estadística Minera de España al año 1897* and *ibid. 1898*, Madrid, p. 24.

† *Ibid.*, pp. 26 and 27.

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SPAIN—*continued.*

TABLE 485.

DEATHS from ACCIDENTS at MINES, classified according to CAUSE, during the Years 1897 and 1898.*

Cause.	1897.		1898.	
	Number of Deaths by Accidents.	Percentage of Total.	Number of Deaths by Accidents.	Percentage of Total.
Falls of ground	40	28·2	40	18·7
Explosions of firedamp	8	5·6	58	27·1
Blasting	5	3·6	9	4·2
Suffocation by gases	15	10·6	2	0·9
Falling down shafts	16	11·2	21	9·8
Breaking of machinery, &c.	8	5·6	25	11·7
Miscellaneous	50	35·2	59	27·6
Total	142	100·0	214	100·0

Sumatra. (*See* DUTCH EAST INDIES.)

Surinam. (*See* DUTCH GUIANA.)

Sweden.†

Coal.—All the coal mines are in Scania, the most southerly province of the kingdom. The seams, which are of Rhætic age, are interstratified with beds of fire-clay, and the two minerals are worked together.‡ The thickness of the coal seams, including the partings of shale, varies from three to five feet.

Copper.—The well-known Stora Kopparberg mine close to Falun furnishes most of the copper of Sweden, as well as some of the gold.

* *Estadistica Minera de España al año 1897* and *ibid. 1898*, Madrid, pp. 26 and 27.

† *Bidrag till Sveriges Officiela Statistik för år 1898*, Stockholm, 1899.

‡ Nordenström, *L'industrie minière de la Suède*, Stockholm, 1897.

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SWEDEN—*continued.*

Iron ore.—Sweden, which has long been famous as an iron-producing country, is likely to furnish important supplies of ore to this country in the near future, when the vast deposits in the province of Norrbotten, within the Arctic Circle, are rendered available for export at all seasons of the year by railway communication with the west coast of Norway. The Gellivare mines, which are connected by rail with the port of Luleå on the Gulf of Bothnia, furnished 859,000 * tons in 1898, or more than one-third of the total output of iron ore in Sweden. Still further north lie the deposits of Kiirunavaara and Luossavaara, which, according to Lundbohm † "are the largest individual deposits " of the kind in Scandinavia, while in all Europe and America their rivals in size are " few in number; they consist principally of magnetite, and the remaining part is also " magnetic, though here mixed with hæmatite."

Lundbohm's useful little map shows the course of the proposed railway from Gellivare, to Kiirunavaara, Luossavaara, and Victoria-harbour on the Ofoten-fjord, in latitude 68° 30′ N.

It is expected that the railway will be opened in 1903.*

Peat.—The table of production takes no account of either the peat diggings or of the stone quarries. Peat is largely dug for use as household fuel, and for making peat-litter and peat-mould.

Stone.—Granite, using the word in its commercial sense, is quarried on the west coast of Sweden, and also on the Baltic, and forms an important article of export. Porphyry and marble are also products of Sweden.

Portland cement is manufactured in several places, and the total annual production is about 335,000 casks.

Zinc.—The Åmmeberg mines supply most of the zinc ore, which is exclusively blende.

TABLE 486.

PERSONS EMPLOYED at various MINES and FELDSPAR QUARRIES during the Years 1897 and 1898.

Year.	Kind of Workings.	Under-ground.			Above-ground.			Totals.
		Men.	Young Persons under 18.	Total.	Men.	Women and Young Persons under 18.	Total.	
1897	Coal mines	1,127	86	1,213	384	32	416	1,629
„	Iron „	3,484	136	3,620	4,232	945	5,177	8,797
„	Other „	926	3	929	667	401	1,068	1,997
„	Feldspar quarries ...	95	1	96	81	81	162	258
	Total for 1897 ...	5,632	226	5,858	5,364	1,459	6,823	12,681
1898	Coal mines	1,185	86	1,271	357	35	392	1,663
„	Iron „	3,869	103	3,972	4,216	1,086	5,302	9,274
„	Other „	1,060	5	1,065	790	431	1,221	2,286
„	Feldspar quarries ...	70	1	71	136	97	233	304
	Total for 1898 ...	6,184	195	6,379	5,499	1,649	7,148	13,527

* Consul MacGregor, "Trade of Stockholm and the Eastern Coast of Sweden for the year 1898." *Dipl. and Cons. Reports*, No. 2,317, Ann. Ser., 1899 [C. 9044–143].

† *The iron-ore fields at Kiirunavaara and Luossavaara in the Province of Norrbotten*, Stockholm, 1898.

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SWEDEN—*continued.*

TABLE 487.

QUANTITY of MINERALS obtained from MINES and FELDSPAR QUARRIES during the Years 1897 and 1898.

Mineral.	Year.			
	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Crowns.	Metric Tons.	Crowns.
Alum	131	14,170	153	16,827
Coal	224,343	1,610,037	236,277	1,725,689
Cobalt ore	kil. 700	9,100	kil. 3,001	37,500
Copper ore	25,207	343,377	23,335	369,439
Copper, sulphate	1,315	368,000	1,165	292,000
Feldspar	19,298	199,972	20,737	239,154
Fire clay...	112,283	180,262	131,391	208,245
Gold ore...	1,662	34,126	2,136	24,309
Graphite	kil. 99,170	12,000	kil. 50,412	6,000
Iron ore	2,087,166	10,007,410	2,302,914	11,001,705
Iron pyrites	517	5,542	386	3,840
Iron, sulphate	231	11,982	124	6,602
Manganese ore	2,749	47,075	2,358	41,270
Manganese ore in powder	343	16,464	363	16,335
Silver and lead ore	10,068	233,791	6,743	198,632
Sulphur...	—	—	50	6,000
Zinc ore...	56,636	1,462,007	61,627	2,235,730
Total value in crowns	—	14,555,315	—	16,429,277
„ „ £ sterling ...	—	£799,742	—	£902,707

TABLE 488.

PERSONS KILLED and INJURED by ACCIDENTS at MINES and FELDSPAR QUARRIES during the Years 1897 and 1898.

Year.	Number of Persons Killed.	Number of Persons Injured.*	Death-rate per 1,000 Persons Employed.
1897	12	299	·95
1898	14	318	1·03

Switzerland.†

That the mineral industries of Switzerland are of little importance is evident from the following tables; nevertheless the kinds of mineral which are being obtained from underground workings are numerous, viz.: anthracite, bituminous limestone, brown coal, cobalt and nickel ore, fireclay, gold ore, graphite, gypsum, iron ore, limestone, magnesium sulphate, marble, marl, potstone, salt, sandstone, and slate.

* Injuries causing absence from work for 14 days at least.

† *Rapports des Inspecteurs Fédéraux des Fabriques et des Mines dans les années 1896 et 1897*, Aarau, 1898; and *Notice sur les exploitations minérales de la Suisse*, Geneva, 1894.

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SWITZERLAND—*continued.*

Anthracite.—Two mines, Chandoline and Granges, produce annually 1,500 to 2,000 tons of anthracite containing a high percentage of ash.

Bituminous limestone.—The asphalt rock of the Val de Travers, which is exported from Switzerland to various countries, is a bituminous limestone of Cretaceous age. The bed is 4 to 8 m. thick, and contains about 10 per cent. of bitumen.

Brown coal and cement.—With reference to the Swiss brown coal, which is of Miocene age, it is interesting to learn that seams of only 4 to 6 inches in thickness were worked for many decades near the towns of Zurich and Lausanne, and probably with profit. Nowadays the beds immediately underlying and overlying the coal are worked with it, and are used for making Roman cement, Portland cement, bricks, and manure.

Iron.—The largest workings for iron are at Delsberg, a mine which employs 136 workmen.

*Salt.**—Switzerland possesses five workings for salt, viz., Bex salt mine in the Rhone valley; the brine wells of Rheinfelden, Ryburg, and Kaiseraugst in the Canton Aargau; and the brine well Schweizerhalle in the Canton Baselland. The annual output now approaches 50,000 tons.

TABLE 489.

NUMBER of PERSONS EMPLOYED at MINES and UNDERGROUND QUARRIES during the Year 1896–1897.

Kind of Workings.	Number of Works.	Number of Persons Employed.
Mines	20	459
Underground quarries	107	1,405
Total	127	1,864

TABLE 490.

QUANTITY of MINERALS produced during the Years 1896 and 1897.

Mineral.	Year.	
	1896.	1897.†
	Metric Tons.	Metric Tons.
Anthracite	—	
Bituminous limestone	25,000	
Brown coal	—	
Cement (Portland)	132,730	
„ (Roman)	15,320	
Cobalt and nickel ore...	—	
Fireclay	—	
Gold ore	—	
Graphite	—	

* *Statistisches Jahrbuch der Schweiz;* Bern, Vol. VII., 1898, p. 106.
† Figures not yet available.

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SWITZERLAND—*continued.*

TABLE 490—*continued.*

Mineral.	Year.	
	1896.	1897.†
	Metric Tons.	Metric Tons.
Gypsum	51,507	
Iron ore	12,000	
Lime (hydraulic)	208,528	
Magnesium sulphate	—	
Marble	—	
Marl	—	
Potstone	—	
Pozzolana	9,000	
Salt (Bex mine and brine wells)	47,292	
Sandstone	—	
Slate	—	

TABLE 491.

DEATHS from ACCIDENTS at MINES and QUARRIES during the Years 1897 and 1898.

Kind of Workings.	1897.		1898.†	
	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.
Mines	2	4·36		
Underground quarries	7	4·98		

Tong-King. (*See* INDO-CHINA.)

Tunis.*

Tunis cannot be called an important mining country at the present time.

Phosphate of lime.—This mineral is found at the base of the Eocene rocks, especially in the mountain chain running from Gafsa to Tamerza, where the beds may be followed for a distance of about 40 miles. The crude rock contains from 55 to 60 per cent. of phosphoric acid.

* *La Tunisie à l'Exposition internationale de Pêche de Bergen*, Tunis, 1898.
† Figures not yet available.

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TUNIS—*continued.*

The phosphate mines in the neighbourhood of Gafsa have been taken up by a French company, and now that the mines have been connected with the port of Sfax by a railway 150 miles in length, it is estimated that 300,000 tons will be exported annually.*

Salt.—This mineral is obtained from salt marshes and lakes, especially at Rhadès. The salt-pans worked by the State produced in 1897 8,100 tons of salt which was sold at about 24 francs per ton, and in 1898, 7,300 tons at 22 francs per ton.

An important salt lake at La Soukhra, near Tunis, fed by salt-water from the sea and covering an area of more than 15 square miles, becomes completely dried up in summer, and leaves a deposit of salt from 2 to 6 inches in thickness. This immense source of salt has lately begun to be utilized for export purposes.

Zinc ore.—Calamine is worked in several places, and after being calcined is shipped to France and Belgium.

TABLE 492.

QUANTITY and VALUE of MINERALS produced during the Years 1897 and 1898.†

Mineral.	1897.		1898.	
	Quantity.	Value.	Quantity.	Value.
	Metric Tons.	Francs.	Metric Tons.	Francs.
Gypsum	12,500	—	10,800	—
Lead ore	2,123	135,000	2,375	188,400
Marble	1,000	—	600	—
Onyx	535	—	—	—
Phosphate of lime	7,300	—	—	—
Potter's clay	5,000	—	5,800	—
Salt from marshes and salt lakes	8,100	194,400	7,300	160,600
Stone (dressed for building)	355,000	—	295,000	—
„ (broken)	153,000	—	67,000	—
Zinc ore (calcined)	11,830‡	736,000	21,763§	1,081,700

Turkey.‖

The mineral resources of the Ottoman Empire are great, but almost entirely undeveloped. No official statistics are published.

Alum.—A little alum is manufactured.

Antimony.—Several antimony mines are being worked; the Allkhar mines, near Rozdan, yielded 1,200 tons of 55 per cent. ore in 1892, and the shipments from mines near Aidin amounted to 1,322 tons in 1895.

Arsenic.—Orpiment occurs with the antimony ore at Allkhar, near Rozdan, and about 500 tons are exported yearly; both orpiment and realgar are mined in Macedonia.

* Consul-General Johnston, "Trade and General Progress in Tunis during the Year 1898–99." *Dipl. and Cons. Reports* No. 2,279, Ann. Ser., 1899 [C. 9044-105].

† *Statistique de l'Industrie Minérale en France et en Algérie pour l'année 1897*, p. 80, *Ibid. 1898*, p. 86.

‡ Exclusive of 3,500 tons of calamine from prospecting operations.

§ „ 3,000 „ „ „

‖ Helmhacker, "The Useful Minerals of Turkey." *Eng. Min. Jour.*, Vol. LXVI., 1898, p. 635.

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TURKEY—*continued.*

Asphalt.—This mineral is being mined near Salonica, and it is known to exist in other places.

Boracite.—Borate of calcium, known in the trade as boracite, and to mineralogists as pandermite, is worked near the port of Panderma in Asia Minor. The annual output is from 10,000 to 11,000 tons.*

Chrome ore.—Chromite occurs in irregular bunches in serpentine; 3,000 tons were shipped from Salonica in 1898.†

Coal.—The only coal mines deserving mention at the present time are near Eregli, the ancient Heraclea. Bituminous coal and lignite are known in other parts of the Empire. The output is estimated to be about 176,000 tons annually.*

Copper.—Copper ores have been worked in various places; nowadays the output is extremely small. 1,020 tons of copper from Arghana Maden‡ were shipped at Alexandretta in 1897.

Emery.—This mineral was discovered in Asia Minor about fifty years ago; 8,400 tons were shipped from Smyrna in 1895.

Fuller's earth is quarried on a large scale near Angora.*

Gold.—A little alluvial gold is obtained in Thessaly and in some of the valleys of Macedonia. The river Pactolus, so famous in ancient times, no longer yields gold.

Iron.—The deposits of iron ore which were utilized in former days have ceased to be worked.

Manganese.—There are manganese mines in Macedonia and in Asia Minor. 31,500 tons of ore were exported from Salonica in 1898.†

Meerschaum.—Mining meerschaum is an industry of some importance near Broussa in Asia Minor, where sometimes 1,000 men are employed.* The output is about 60 tons of clean meerschaum yearly.

Petroleum.—No attempt has been made to ascertain the value of the oil springs known in old Servia, near Broussa, and in Armenia.

Salt.—This is a Government monopoly; the mineral is obtained from sea water, brine lakes or springs, and rock salt mines. The rock salt mines are worked near Van in Armenia. 203,128† tons of salt were produced in the year 1893–4. Rock salt is also widely distributed over many parts of Tehama.§

Silver-lead.—Deposits of argentiferous galena appear to be worked on a small scale at Edremid and near Adana.

United States.

The position of the country is well summed up by Mr. Rothwell,‖ who says:—"The "United States was, in 1898, by far the greatest producer of iron and steel in the world; "was second only to Great Britain—and then by a very small quantity—in the production of "coal; and furnished more than half the total copper supply of the world. No other nation "approaches this in the total value of its mineral production."

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* *Oest. Zeitsch. f. B. u. Hüttenwesen*, Vol. XLIV., 1897, p. 223.

† Consular Assistant Heathcote, "Trade of Salonica for the Year 1898." *Dipl. and Cons. Reports*, No. 2,270, Ann. Ser., 1899 [C. 9044–96].

‡ Consul Barnham, "Trade of Aleppo and Adana for the Year 1897." *Dipl. and Cons. Reports*, No. 2,083, Ann. Ser., 1898 [C. 8648–105].

§ Consul Devey, "Trade of Jeddah and Hodeidah for the Year 1897." *Dipl. and Cons Reports*, No. 2,203, Ann. Ser., 1899 [C. 9044–29].

‖ "United States Mineral and Metal production in 1898." *Eng. Min. Jour.*, Vol. LXVIII., 1899, p. 122.

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UNITED STATES—*continued.*

Coal.—The total production of coal in 1898 was 199,614,035 metric tons, of which 48,441,601 tons were anthracite and 151,172,434 true bituminous coal. More than one-half of the mineral fuel raised in the United States is produced by Pennsylvania. The anthracite comes almost entirely from Pennsylvania; Colorado and New Mexico yield very small quantities.

In the case of anthracite there is an increase of nearly 700,000 tons, whilst bituminous coal shows the enormous rise of more than 17 million tons; taking anthracite and bituminous coal together, there is a net increase of nearly 18 million tons.

Copper.—There are three great copper States: Arizona, Michigan, and Montana; the last furnished in 1898 more than 39 per cent. of the total output of the whole country.

Gold.—The principal gold-producing states are Colorado with a yield in 1898 of 1,222,073 ozs., and California with a product of 756,483 ozs.

Iron.—The chief iron-producing States in order of importance are Michigan, Minnesota, and Alabama. The State of Minnesota is yearly becoming of more and more importance as a producer of iron ore, especially since the development within the last few years of the resources of the Mesabi range. The open and underground workings of this region produced 5,963,509 tons of iron ore in 1898. Few, if any, districts in the world can show such a rapidly increasing output, and not only is the quantity large, but the percentage of metal is high. The analysis of 36 cargoes from various mines show percentages of iron ranging from 59 to 65.

Lead.—Colorado was for many years remarkable for its large output of lead; but with the fall in the price of silver many of its mines, which produced both metals, have been stopped. Idaho was the greatest producer in 1898, followed closely by Colorado; whilst Utah, Montana, Missouri, and Kansas are likewise large lead-producing States.

Petroleum.—The yield of the oil-wells of the United States far surpasses that of all the rest of the world put together. In 1898 the production was 55,354,233 barrels of 42 gallons.

The principal oil-producing States are Pennsylvania, West Virginia, Ohio, and Indiana.

*Phosphate of lime**.—The three great phosphate States are Florida, Tennessee, and South Carolina; Florida now furnishes more of the fertilizer than the other two States put together.

Quicksilver.—California is the only State now producing quicksilver.

Silver.—Colorado, in spite of its slightly decreased production, yields more than two-fifths of the total output of silver, and Montana about one-third.

Zinc.—Zinc ore is abundant in the United States; Illinois, Indiana, Kansas, and Missouri produce seven-eighths of the total quantity obtained.

It is beyond the province of this Report to enter into minute details concerning each individual State; but a few facts relating to those in which mining is one of the important industries may with propriety be inserted from time to time.

COLORADO.

Judged by the value of its metallic output, which now exceeds eight millions sterling annually, Colorado is the most important metalliferous State in the Union. Its ore mines are regulated by a new Act† of the General Assembly, which came into force on 9th July, 1899. Section 20 contains 27 rules for working, corresponding to our General Rules, but it is curious to note the almost complete absence of regulations for ventilation. The only rule which bears upon the subject is No. 5, which is destined to prevent the pollution of the atmosphere by decaying timber stacked underground.

The danger of fires, and more especially of a fire at the shaft-top or tunnel entrance, was evidently very apparent to the framers of the Colorado Act, for no less than three of the 27 rules deal with this matter.

With the object of extinguishing fires at their outset, chemical fire-extinguishers or hand grenades must be kept in convenient places for immediate use (Rule 10) in mines where water is not available; whilst Rules 14 and 15 provide for safe exits in the case of fire destroying buildings over the entrance to the mine.

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* *Eng. Min. Jour.*, Vol. LXVIII., 1899, p. 244.
† *Bulletin No 3, Bureau of Mines, State of Colorado.* Denver, 1899.

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UNITED STATES—*continued.*

The coal mines of Colorado are governed by an Act* of the State Assembly passed in 1885 and amended in 1887 ; but the Inspector is of opinion that it is lax and incomplete, and that it requires revision.

The ore mines† in 1898 employed 30,231 persons, and the coal mines* 7,425. There were 108 deaths from accidents at the former, and 24 at the latter ; both classes of mines, therefore, had high death-rates. The Commissioner of mines speaks of Colorado's record as "odious" compared with Europe.

ILLINOIS.

Among the coal-producing States, Illinois comes second, though a very long way behind Pennsylvania. The output of Illinois in 1898 was more than 16 million metric tons, approaching that of Belgium and exceeding that of such British counties as Derby, Stafford, and Lanark.

The Report of State Bureau of Labor Statistics‡ contains many useful facts about coal-mining in Illinois, and especially about the under-cutting machines which replace hand labour. No less than 392 under-cutting machines are in use, distributed in 55 mines, in many of which the machines are employed to the total exclusion of hand labour in under-cutting. More than three million tons, or 18 per cent. of the total output of the State, were got by machine under-cutting. The favourite machine is the "Harrison," in fact, more than half the machines are of this type ; next comes the "Ingersoll-Sergeant" machine, which, like the "Harrison," is a mechanical chisel worked by compressed air. In addition there are the chain-cutting "Link-Belt" and "Jeffrey" machines worked by electricity.

The death-rate§ from accidents is higher than in British coal mines, for during the last five years it has exceeded 2 per 1,000 ; as the number of underground workers is not stated separately, it is impossible to calculate the risk of the true miners.

TABLE 493.

PERSONS EMPLOYED at COAL MINES in the various STATES during the Years 1897 and 1898.‖

State.	1897.		1898.	
	Average Number of Persons Employed.	Short Tons of Coal raised per Person Employed.	Average Number of Persons Employed.	Short Tons of Coal raised per Person Employed.
Alabama	10,597	556	10,733	609
Arkansas...	1,990	430	2,555	472
California	381	273	314	510
Colorado...	5,852	574	6,440	633
Georgia	469	418	504	484
Idaho	7	92	7	148
Illinois	33,788	594	35,026	531
Indiana	8,886	467	8,971	549
Indian Territory	3,168	422	3,216	430
Iowa	10,703	431	10,262	450
Kansas	6,639	460	7,197	473
Kentucky	7,983	451	7,614	511
Maryland	4,719	941	4,818	970
Michigan	537	416	715	442
Missouri...	6,414	416	6,542	411
Montana...	2,337	705	2,359	627

* *Eighth Biennial Report of the Inspector of Coal Mines of the State of Colorado, 1897–1898*, Denver, 1899, pp. 5 and 169.
† *Report of the State Bureau of Mines for the Year 1898*, Denver, 1899, p. 22.
‡ *Seventeenth Annual Report of the State Bureau of Labor Statistics concerning coal in Illinois, 1898*, Springfield, Ill., 1899.
§ *Ibid.* p. 67.
‖ Official Return furnished by the United States Geological Survey, Washington.

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UNITED STATES—*continued.*

PERSONS EMPLOYED at COAL MINES in the various STATES during the Years 1897 and 1898—*continued.*

State.	1897.		1898.	
	Average Number of Persons Employed.	Short Tons of Coal raised per Person Employed.	Average Number of Persons Employed.	Short Tons of Coal raised per Person Employed.
New Mexico	1,659	432	1.873	529
North Carolina	51	417	30	383
North Dakota	170	454	151	556
Ohio	26,410	462	26,986	538
Oregon	254	401	199	292
Pennsylvania, Anthracite	149,884	351	145,504	367
Pennsylvania, Bituminous	77,272	704	79,611	819
Tennessee	6,337	456	6,643	331
Texas	1,766	362	2,130	322
Utah	704	741	739	803
Virginia	2,344	652	1,855	979
Washington	2,739	524	3,145	599
West Virginia	20,504	695	21,607	773
Wyoming	3,137	828	3,475	824
Total for United States	397,701	503	401,221	548

TABLE 494.

QUANTITY and VALUE of MINERALS and METALS produced in the UNITED STATES, 1897 and 1898.*

Product.	Customary Measures.	1897. Quantity. Customary Measures.	1897. Quantity. Metric Tons.	1897. Value at Place of Production.	1898. Quantity. Customary Measures.	1898. Quantity. Metric Tons.	1898. Value at Place of Production.
Non-Metallic.				$			$
Asbestos	Short tons	580	526	6,450	605	549	10,300
Asphaltum	„	75,945	68,896	664,632	76,337	69,252	675,649
Barytes	„	26,042	23,625	58,295	31,306	28,400	108,339
Bauxite	Long tons	20,590	20,920	57,652	25,149	25,552	75,437
Borax	Pounds	16,000,000	7,258	1,080,000	16,000,000	7,258	1,120,000
Bromine	„	487,149	220	129,094	486,979	221	126,614
Building stone	—	—	—	36,070,851	—	—	36,607,264
Cement	Bls., 300 lbs.	10,989,463	1,495,422	8,178,283	11,968,708	1,628,675	9,781,501
Clay (brick)	—	—	—	8,000,000	—	—	9,000,000
„ (all other than brick)	Long tons	—	—	1,000,000	—	—	1,000,000
Coal, anthracite†	„	46,974,714	47,728,545	79,301,954	47,663,075	48,427,953	75,414,537
„ bituminous	Short tons	147,609,985	133,909,617	119,567,224	166,592,023	151,129,844	132,586,313
Cobalt oxide	Pounds	19,520	9	31,232	7,848	4	11,773
Corundum and emery	Short tons	2,165	1,964	106,574	4,064	3,687	275,064
Feldspar	Long tons	11,175	11,354	43,100	12,000	12,192	32,395
Fibrous talc	Short tons	57,009	51,718	396,936	54,356	49,311	411,430
Flint	Long tons	11,952	12,144	26,227	19,130	19,437	42,670
Fluorspar	Short tons	5,062	4,591	37,159	7,675	6,963	63,050
Fuller's earth	„	17,113	15,524	112,272	14,860	13,481	106,500
Garnet (abrasive)	„	2,554	2,316	80,853	2,967	2,691	86,850
Graphite, Crystalline	Pounds	—	—	—	2,360,000	1,071	75,200
Graphite, Amorphous	Long tons	1,668	1,695	54,277	890	904	

* Official Return furnished by the United States Geological Survey, Washington.
† Represents production from Pennsylvania only.

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UNITED STATES—*continued.*

QUANTITY and VALUE of MINERALS and METALS produced in the UNITED STATES, 1897 and 1898—*continued.*

Product.	Customary Measures.	1897. Quantity. Customary Measures.	1897. Quantity. Metric Tons.	1897. Value at Place of Production.	1898. Quantity. Customary Measures.	1898. Quantity. Metric Tons.	1898. Value at Place of Production.
Non-Metallic—cont.				$			$
Grindstones	—	—	—	368,058	—	—	489,769
Gypsum	Short tons	288,962	262,161	755,864	291,638	264,570	755,280
Infusorial earth and Tripoli	„	3,833	3,477	22,835	2,733	2,479	16,691
Limestone for iron flux	Long tons	4,247,688	4,315,853	2,124,000	5,275,819	5,360,483	2,638,000
Magnesite	Short tons	1,143	1,037	13,671	1,263	1,146	19,075
Manganese ore	Long tons	11,108	11,286	95,505	15,957	16,213	129,185
Marls	Short tons	60,000	54,431	30,000	60,000	54,431	30,000
Mica — Sheet	Pounds	—	—	—	129,520	59	103,534
Mica — Scrap	Long tons	777	789	95,226	3,999	4,063	27,564
Millstones	—	—	—	25,932	—	—	25,934
Mineral waters	Gallons sold	22,362,282	—	4,505,620	28,853,464	—	8,051,833
	Litres	101,602,089			121,963,592		
Monazite	Pounds	44,000	20	1,980	250,776	114	13,542
Natural gas	—	—	—	13,826,422	—	—	14,750,000
Oilstones	—	—	—	149,970	—	—	180,738
Paints, mineral	Short tons	60,913	55,280	795,793	58,850	53,388	694,856
Petroleum — Bls., 42 gals.	Bls., 42 gals.	60,568,081	7,691,185	40,929,611	55,354,233	7,029,109	44,153,359
Petroleum — Litres	Litres	11,557,918,351			10,562,984,576		
Phosphate rock	Long tons	1,039,345	1,056,024	2,673,202	1,308,885	1,329,889	3,453,460
Precious stones	—	—	—	130,675	—	—	160,920
Pumice stone	Short tons	—	—	—	600	545	13,200
Pyrites	Long tons	143,201	145,499	391,541	193,364	196,467	593,801
Rutile	Pounds	100	—	350	140	—	700
Salt	Bls., 280 lbs.	15,973,202	2,028,691	4,920,020	17,612,634	2,236,910	6,212,554
Soapstone	Short tons	21,923	19,888	365,629	22,231	20,167	287,112
Sulphur	„	2,275	2,063	45,590	1,200	1,088	32,96
Zinc, white	„	25,000	22,679	1,750,000	33,000	29,937	2,310,000
Total value of non-metals in $		—	—	329,020,359	—	—	352,784,952
Total value of non-metals in £ sterling.		—	—	£67,579,845	—	—	£72,589,496
Metallic.				$			$
Aluminium	Pounds	4,000,000	1,814	1,500,000	5,200,000	2,358	1,716,000
Antimony	Short tons	756	694	109,655	1,120	1,016	184,050
Copper	Pounds	494,078,274	224,111	54,060,180	526,512,987	238,822	61,865,276
Gold (fine) — Troy ounces	Troy ounces	2,774,935	—	57,363,000	3,118,398	—	64,463,000
Gold (fine) — Kilos.	Kilos.	86.310			96,993		
Iron, pig	Long tons	9,652,680	9,807,582	95,122,299	11,773,934	11,962,877	116,557,000
Lead	Short tons	212,000	192,323	14,885,728	222,000	201,395	16,650,000
Nickel	Pounds	23,707	11	7,823	13,411	6	4,394
Platinum — Troy ounces	Troy ounces	150	—	900	225	—	1,913
Platinum — Kilos.	Kilos.	5			7		
Quicksilver	Flasks 76½ lbs.	26,648	925	993,445	31,092	1,079	1,188,627
Silver (fine) — Troy ounces	Troy ounces	53,860,000	—	69,637,172	54,438,000	—	70,384,485
Silver (fine) — Kilos.	Kilos.	1,675.234			1,693,212		
Zinc	Short tons	99,980	90,700	8,498,300	115,399	104,688	10,3[illegible]5,910
Total value of metals in $		—	—	302,198,502	—	—	343,400,955
„ „ „ £ sterling		—	—	£6[illegible].653,080	—	—	£70,658,633
Estimated value of products unspecified.		—	—	$1,000,000	—	—	$1,000,000
Total value in $		—	—	632,218,861	—	—	697,185,907
„ „ £ sterling		—	—	£129,838,264	—	—	£143,453,408

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UNITED STATES—*continued.*

The following tables give further details concerning the output of coal and iron ore:-

TABLE 495.

COMPARATIVE OUTPUT for the Years 1897 and 1898 in the principal COAL-PRODUCING STATES.*

State.	1897.	1898.	Comparison with previous Year.
	Metric Tons.	Metric Tons.	Metric Tons.
Illinois	18,209,712	16,873,012	— 1,336,700
Ohio	11,339,817	12,753,334	+ 1,413,517
Pennsylvania { Anthracite ...	47,700,746	47,901,742	+ 200,996
Pennsylvania { Bituminous ...	49,599,699	58,284,514	+ 8,684,815
West Virginia	11,893,679	14,524,262	+ 2,630,583
Other States	42,894,509	49,220,933	+ 6,326,424
Total	181,638,162	199,557,797	+ 17,919,635

TABLE 496.

PRODUCTION of IRON ORES.†

State.	Red Hematite.	Brown Hematite.	Magnetite.	Carbonate.	Total.
	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.	Metric Tons.
Michigan	7,307,796	—	156,949	—	7,464,745
Minnesota	6,059,209	—	—	—	6,059,209
Alabama	1,882,849	557,441	—	—	2,440,290
Other States	1,004,404	1,461,935	1,100,896	56,262	3,623,497
Total for 1898	16,254,258	2,019,376	1,257,845	56,262	19,587,741
„ 1897	14,644,617	1,993,439	1,076,481	84,632	17,799,169

TABLE 497.

DEATHS from ACCIDENTS at COAL MINES in the various STATES, during the Years 1897 and 1898.‡

State.	1897.			1898.		
	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.	Tons of Mineral raised per Life lost.	Number of Persons Killed.	Death-rate per 1,000 Persons Employed.	Tons of Mineral raised per Life lost.
Colorado	35	4·99	101,876	24	3·23	173,9
Illinois	69	2·04	290,909	75	2·14	247,5
Indiana	16	2·00	264,255	22	2·45	—
Indian Territory	22§	6·34	60,672	17‖	5·29	85,7
Iowa	21§	1·81	180·940	26‖	2·46	169,1
Kansas	6	0·71	612,032	6	0·83	—
Kentucky	12	1·55	275,338	6	0·79	590,5
Maryland	5	1·17	882,386	4	0·83	—
Missouri	8	1·22	303,673	9	1·38	—
New Mexico	7	5·13	104,791	7	3·74	—
Ohio	40	1·51	304,923	54	1·84	270,5
Pennsylvania { Anthracite ...	424	2·84	110,725	411	2·89	114,5
Pennsylvania { Bituminous ...	149	1·72	366,941	198	2·25	323,5
Tennessee	10	1·58	288,885	20	2·56	162,5
Utah	3	4·26	173,853	3	4·17	194,5
Washington	7	2·56	204,873	9	2·86	—
West Virginia	62	2·89	186,643	90	4·17	—

* Compiled from the Reports of the various States.
† Return furnished by the United States Geological Survey, Washington.
‡ Compiled from the Reports of Inspectors of Mines for the various States, *The Mineral Industry*, Vol. VI., 189 R. P. Rothwell, New York and London, 1898, pp. 722–735, and *Eng. Min. Jour.*, Vol. LXIX, 1900, p. 110.
§ For Fiscal Year ended June 1897.
‖ „ „ „ „ „ 1898.

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UNITED STATES—*continued.*

Statistics concerning all the fatalities at ore mines are lacking.

There were 20 deaths from accidents,* equivalent to 4·55 per 1,000 persons employed, at the iron mines of Marquette County (Michigan) during the year ended 30th September 1898.

The annual volume issued by the State of Michigan,† entitled "Mines and Mineral Statistics," does not give the number of fatalities at the Lake Superior copper mines.

Uruguay.

The number of persons employed at mines and quarries in the Republic of Uruguay is unknown; judging from the output of auriferous quartz, which appears to be the principal mineral worked, the mining population cannot be large.

TABLE 498.

QUANTITY and VALUE of GOLD produced in 1896 and 1897.‡

Mineral.	1896.		1897.	
	Quantity.	Value.	Quantity.	Value.
Gold	Kilos. 56	£ 5,320	Kilos. 87	£ 8,193

Venezuela.§

According to official statements the country abounds in asphalt, coal, petroleum, salt, and sulphur, as well as in the ores of copper, gold, iron, lead, silver, and tin; but these rich mineral resources are almost entirely neglected.

Salt is a Government monopoly; the net amount of revenue from this source in 1898 was 1,019,573 bolivares, or £161,517.

TABLE 499.

QUANTITY and VALUE of GOLD exported from Ciudad Bolivar in 1897 and 1898.

1897.		1898.	
Gold.		Gold.	
Quantity.	Value.	Quantity.	Value.
Kilos. 1,353	£ 128,906	Kilos. 1,218	£ 111,068

* *Annual Report of the Inspector of Mines for Year ending 30th September 1898.* Ishpeming, 1898.
† Ishpeming, 1899.
‡ *Annuario Estadistico de la Républica Oriental del Uruguay. Año, 1897.* Montevideo, 1898.
§ Acting Consul Andral, "Trade of Caracas and District for the Years 1897 and 1898." *Dipl. and Cons. Reports*, Nos. 2,094 and 2,315, Ann. Ser., 1898 and 1899 [C. 8648-116, and C. 9044-141.]

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The following is the general arrangement of the tables in this part of the statistics :—

ANNUAL TABLES for the year 1899, arranged as follows :—

(1) Persons employed.

(2) Output.

(3) Fatal accidents and deaths.

(4) Non-fatal accidents and persons injured.

(5) Death-rates from accidents.

COMPARATIVE TABLES giving under similar heads the figures relating to mines for the years 1873 to 1899.

The general results for the year 1899 may be summed up as follows :—

PERSONS EMPLOYED.

The total number of persons employed in and about all the mines of the United Kingdom was 764,166, of whom 729,009 worked at the 3,216 mines under the Coal Mines Act, and 35,157 at the 794 mines under the Metalliferous Mines Act.

Compared with 1898 there is an increase of 22,115 persons at the mines under the Coal Mines Act, and of 926 persons at the mines under the Metalliferous Mines Act. The increase in the number of persons employed at mines under the Coal Mines Act is nearly double what it was in 1898.

Of the 729,009 persons working at the mines under the Coal Mines Act, 583,009, or about 80 per cent., were employed below ground. Of the 146,000 surface workers, 4,702, or 3·2 per cent., were females. There is an increase of 85 females compared with 1898.

At the mines under the Metalliferous Mines Act, 20,618 persons, or nearly 59 per cent., worked below ground, and of the 14,539 surface workers, 459, or nearly 3·2 per cent., were females.

At the quarries under the Quarries Act there were 97,995 persons employed, of whom 64,159 worked inside the actual pits or excavations, and 33,836 outside.

Compared with 1898 the figure of persons employed outside quarries shows a reduction of 37,890 persons employed ; but it is important to point out that this reduction is apparent, not real. It is due to the transfer of the duty of inspecting the works for making bricks, tiles, Portland cement, &c., situated outside the quarries, from the Mines Branch of the Home Office to the Factory Branch. So far as the inside workers are concerned, the figures show an increase of 1,407 persons, and no doubt at the outside works there is in reality a corresponding larger number of persons employed.

The persons employed *occasionally* at quarries are not included in the above figures.

OUTPUT OF MINERALS.

The total output of minerals at the mines under the Coal Mines Act was 233,319,084 tons, of which 220,085,368 were coal, 2,931,091 fireclay, 7,775,868 ironstone, 2,210,824 oil-shale, and 315,933 sundry minerals.

Adding 9,413 tons from open quarries, the total output of coal was 220,094,781 tons, which is higher than that of the previous year by 18,040,265 tons.

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GENERAL REPORT AND STATISTICS

For 1899.

PART I.—DISTRICT STATISTICS.

INTRODUCTION.

The form in which the statistics appear in this part of the work is governed by administrative arrangements.

The primary classification of the mineral workings therefore follows the Statutes regulating the working of mines and quarries:—

I. Mines under the Coal Mines Regulation Acts: *i.e.*, all mines of coal, stratified ironstone, shale, and fireclay—including within the term "mine," works above ground where the minerals are prepared for use or sale by screening, washing, &c.

II. Mines under the Metalliferous Mines Regulation Acts: *i.e.*, all mines other than those included under the first head.

III. Quarries under the Quarries Act, 1894: all quarries more than 20 feet deep.

IV. Other mineral workings not regulated by any of the Acts mentioned above. Under this head are included the shallow iron-ore workings, tin-streams, brine wells, and certain other works, the owners of which make voluntary returns. It must be borne in mind, however, that in the absence of statutory powers it is impossible to collect returns from most shallow quarries.

The districts for which the statistics are given are the thirteen districts into which the United Kingdom is divided for the purpose of inspection. A list of these districts and of the Inspectors in charge of each will be found on pages 44 and 45, and their areas are shown in the maps at the end of this volume.

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This Report consists of four parts, issued separately, viz. :—

PART I. DISTRICT STATISTICS :—Statistics of the persons employed, output, and accidents at mines and quarries in the United Kingdom in the year 1899, arranged according to the Inspection Districts, to which are added "Comparative Tables" showing the number of persons employed, output, and accidents in mines for each year from 1873 to 1899.

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PART IV. COLONIAL AND FOREIGN STATISTICS :—Statistics relating to Persons Employed, Output, and Accidents at mines and quarries in the British Colonies and in Foreign Countries.

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MINES AND QUARRIES:

GENERAL REPORT AND STATISTICS

For 1899.

PART I.—DISTRICT STATISTICS.

STATISTICS OF THE PERSONS EMPLOYED, OUTPUT, AND ACCIDENTS AT MINES AND QUARRIES IN THE UNITED KINGDOM, ARRANGED ACCORDING TO THE INSPECTION DISTRICTS.

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EDITED BY

C. LE NEVE FOSTER, D.Sc., F.R.S.,

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The increase or decrease of the coal production of the several districts is as follows :—

		Tons.
East Scotland...	+	728,618
West Scotland	+	176,479
Newcastle	+	748,426
Durham	+	33,962
Yorkshire and Lincolnshire	+	1,270,750
Manchester	+	132,150
Liverpool	−	78,567
Midland	+	1,811,313
North Staffordshire	+	146,744
South Staffordshire	−	9,550
South Western	+	4,311,659
South Wales	+	8,768,231

In the case of the two last-named districts, the large difference in the output of 1899, compared with that of the previous year, is partly due to the fact that owing to a strike many of the South Wales collieries were entirely idle for five months in 1898.

The total output of minerals at the mines under the Metalliferous Mines Act was 3,672,841 tons, of which 1,955,796 tons were iron ore.

The total quantity of stone and other minerals obtained from the quarries under the Quarries Act was 43,451,973 tons, of which 3,408,755 tons were iron ore. Adding to the produce of mines and of quarries over 20 feet deep, 1,320,911 tons obtained from shallow open workings, we arrive at a total output of iron ore of 14,461,330 tons.

Fatal Accidents.

At the mines under the Coal Mines Act there were 868 separate fatal accidents, causing 916 deaths. Compared with 1898 there is an increase of 40 in the number of accidents and an increase of 8 in the number of deaths.

At the mines under the Metalliferous Mines Act there were 47 fatal accidents, which caused 56 deaths. Compared with 1898 there is an increase of 16 in the number of accidents and an increase of 23 in the number of deaths.

At the quarries under the Quarries Act there were 117 fatal accidents, which resulted in 117 deaths. Compared with 1898 there is a decrease of 14 in the number of accidents and a decrease of 17 in the number of deaths. The diminution in the number of deaths notified is partly due to the transfer of many of the outside works to the Factory Branch, as mentioned on the previous page.

Non-Fatal Accidents.

The number of non-fatal accidents reported during the year amounted to 3,904 at mines under the Coal Mines Act, 341 at mines under the Metalliferous Mines Act, and 1,126 at quarries under the Quarries Act. As the statutory standard of severity governing the notification of non-fatal accidents is not always interpreted by the managers in the same manner, no stress should be laid on these figures, excepting as regards injuries caused by explosions of fire-damp, explosives, and steam boilers; in these three cases notifications have to be sent to the Inspector, no matter how slight the injuries.

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Death-Rates from Accidents.

The death-rate of the underground workers at the mines under the Coal Mines Act was the same as that of the year 1898, viz., 1·37 per 1,000 persons employed, whilst that of the surface workers was ·79 per 1,000 employed, as against ·92 for the previous year. The death-rate of the underground and surface workers as a whole was 1·26, whilst that of 1898 was 1·28.

At the mines under the Metalliferous Mines Act, the death-rate of the underground workers was 2·43 per 1,000 persons employed, and of the surface workers ·41 per 1,000. The corresponding figures for 1898 were 1·34 and ·43 respectively. The death-rate of the underground and surface workers as a whole was 1·59, a figure decidedly higher than that of 1898, which was only ·96.

At the quarries under the Quarries Act, the death-rate from accidents of the workers *inside* the actual pits or excavations was 1·53 per 1,000, and of the persons employed at factories and workshops *outside* the quarries, but connected with them, ·56 per 1,000. The corresponding figures for 1898 were 1·59 and ·47 respectively. The death-rate of the inside and outside workers as a whole was 1·19 in 1899, as against 1·00 in the previous year.

The apparent increase in the general death-rate of the quarry workers is due to the transfer to the Factory Branch of a large number of workers outside the quarries, who are subject to small risks. The inclusion of these workers in former years lessened the average death-rate of total number of persons employed inside and outside. As appears above, the quarriers proper, or inside workers, had a slightly smaller death-rate from accidents in 1899 than they had in the previous year.

C. LE NEVE FOSTER.

8th May, 1900.

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SUMMARY OF PERSONS EMPLOYED.

TABLE NO. 1. MINES.

—	Coal Mines Act.	Metalliferous Mines Act.	Total.
Below ground.—Males	583,009	20,618	603,627
Above ground.—Males	141,298	14,080	155,378
Females	4,702	459	5,161
Total in 1899	**729,009**	**35,157**	**764,166**
Total in preceding Year	706,894	34,231	741,125

QUARRIES.

Inside.—Males...	64,147
Females	12
Outside.—Males	33,716
Females	120
Total in 1899	**97,995**
Total in preceding Year	134,478

SUMMARY OF FATAL ACCIDENTS AND DEATHS.

TABLE NO. 2. MINES.

—	Separate Fatal Accidents.			Deaths.		
	Coal Mines Act.	Metalliferous Mines Act.	Total.	Coal Mines Act.	Metalliferous Mines Act.	Total.
Below ground	753	41	794	801	50	851
Above ground	115	6	121	115	6	121
Total in 1899	**868**	**47**	**915**	**916**	**56**	**972**
Total in preceding Year ...	828	31	859	908	33	941

QUARRIES.

—	Separate Fatal Accidents.	Deaths.
Inside	98	98
Outside	19	19
Total in 1899	**117**	**117**
Total in preceding Year	131	134

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SUMMARY OF OUTPUT OF MINERALS FROM MINES AND QUARRIES.

TABLE No. 3.

DESCRIPTION OF MINERAL.	Mines.		Quarries.*	Total Output 1899.	Total 1898.
	Coal Mines Act.	Metalliferous Mines Act.			
	Tons.	Tons.	Tons.	Tons.	Tons.
Alum Clay (Bauxite)	—	8,009	—	8,009	12,402
Alum Shale	5,820	—	—	5,820	13,617
Arsenic	—	3,829	—	3,829	4,174
Arsenical Pyrites	—	13,429	90	13,519	11,144
Barytes	—	23,664	1,000	24,664	22,225
Bog Ore	—	—	4,321	4,321	5,418
Chalk	—	4,558	4,673,574	4,678,132	4,298,014
Chert and Flint	—	2,529	66,305	68,834	82,057
Clays and Shale	3,090,104	113,543	11,861,210	15,064,857	14,738,474
Coal	220,085,368	—	9,413	220,094,781	202,054,516
Copper Ore and Copper Precipitate	—	8,319	—	8,319	9,131
Fluor Spar	—	733	50	783	56
Gold Ore	—	3,047	—	3,047	703
Gravel and Sand	3,850	27,341	1,740,085	1,771,276	1,625,690
Gypsum	—	158,326	54,237	212,563	196,028
Igneous Rocks	—	96,461	4,613,464	4,709,925	4,478,308
Iron Ore	7,775,868	1,955,796	4,729,666	14,461,330	14,176,938
Iron Pyrites	9,819	2,411	—	12,230	12,108
Lead Ore	—	30,990	9	30,999	32,985
Limestone (other than Chalk)	32,395	588,916	11,681,579	12,302,890	11,980,578
Manganese Ore	—	415	—	415	231
Mica	—	—	650	650	907
Ochre, Umber, &c.	—	4,056	12,258	16,314	19,827
Oil Shale	2,210,824	—	—	2,210,824	2,137,993
Petroleum	5	—	—	5	6
Phosphate of Lime	—	—	1,446	1,446	1,550
Rock Salt	—	179,010	—	179,010	182,770
Salt from Brine	—	—	1,735,883	1,735,883	1,695,895
Sandstone	105,031	239,968	4,867,625	5,212,624	5,242,115
Slate and Slate Slabs	—	178,598	461,242	639,840	668,859
Sulphate of Strontia	—	—	12,629	12,629	12,941
Tin Ore (dressed)	—	5,662	730	6,392	7,380
Uranium Ore	—	7	—	7	26
Wolfram	—	89	5	94	326
Zinc Ore	—	23,135	—	23,135	23,552

* Exclusive of the produce of most of the Quarries less than 20 feet deep, but including the produce of all open workings for Iron Ore, Bog Ore, Ochre, Phosphate of Lime, Sulphate of Strontia, and Tin Ore.

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PERSONS EMPLOYED.

COAL MINES REGULATION ACT.

TABLE NO. 4.—**Persons Employed** in and about the MINES (including those on Sidings at the Pits and on Private Branch Railways and Tramways, and washing or coking Coal), under the COAL MINES REGULATION ACT in GREAT BRITAIN and IRELAND during the Year 1899.

PERSONS EMPLOYED.	INSPECTION DISTRICT.												Total.
	1	2	3	4	5	6		7	8	10	11	12	13	
						Manchester.								
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	N. and E. Lancashire, and Kent.	Ireland.	Liverpool.	Midland.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Below Ground.														
MALES.														
Ages 12 to 16	3,694	2,585	4,459	4,659	5,761	1,703	23	2,382	5,576	996	940	4,111	7,973	44,862
„ above 16... ..	40,508	31,909	57,001	58,115	69,094	29,475	710	41,329	61,793	19,079	19,153	35,847	74,134	538,147
Total	44,202	34,494	61,460	62,774	74,855	31,178	733	43,711	67,369	20,075	20,093	39,958	82,107	583,009
Above Ground.														
MALES.														
Ages 12 to 13	9	8	8	—	22	25	—	—	4	2	2	11	13	104
„ 13 to 16	775	810	2,074	2,752	2,105	756	14	963	1,660	577	625	384	820	14,315
„ above 16... ...	7,807	6,407	13,776	17,392	18,156	6,456	244	7,809	15,764	5,608	6,418	6,760	14,282	126,879
FEMALES.														
Ages 12 to 13... ...	2	—	—	—	—	—	—	—	—	—	—	—	—	2
„ 13 to 16	246	170	8	—	—	44	—	202	—	13	—	13	14	710
„ above 16... ...	566	416	297	9	2	506	2	1,406	—	129	141	296	220	3,990
Total	9,405	7,811	16,163	20,153	20,285	7,787	260	10,380	17,428	6,329	7,186	7,464	15,349	146,000
Total below and above ground	**53,607**	**42,305**	**77,623**	**82,927**	**95,140**	**38,965**	**993**	**54,091**	**84,797**	**26,404**	**27,279**	**47,422**	**97,456**	**729,009**
Total in preceding Year ...	51,569	40,453	73,736	81,184	91,452	38,732	981	53,799	82,314	25,272	25,993	46,471†	94,938†	706,894
Number of Mines at work	**304**	**221**	**238**	**232**	**397**	**226**	**24**	**219**	**313**	**196**	**238**	**229**	**378**	**3,216**
Number in preceding Year	310	226	235	222	393	242	24	219	320	186	251	245	376	3,249

* No. 9 is a District for the purposes of the Metalliferous Mines Act and Quarries Act only.

† These figures represent the number of persons ordinarily employed during the year, without making any allowance for the period of the strike in the South Wales coalfield, from 1st April to 1st September.

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PERSONS EMPLOYED.

METALLIFEROUS MINES REGULATION ACT.

TABLE No. 5.—**Persons Employed** in and about the MINES under the METALLIFEROUS MINES REGULATION ACT in GREAT BRITAIN and IRELAND, with the ISLE of MAN, during the Year 1899.

PERSONS EMPLOYED.	INSPECTION DISTRICT.													Total.
	1	2	3	4	5	6		7	8	9	10	11	12	13	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire.	Manchester. Ireland.	Liverpool.	Midland.	North Wales, &c.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Below Ground.															
MALES.															
Ages 12 to 13	—	—	—	—	—	—	—	—	—	—	—	—	7	—	7
„ 13 to 16	7	3	24	4	—	7	13	—	15	13	4	—	245	—	335
„ above 16	439	224	6,251	831	467	321	438	11	513	5,287	460	137	4,791	106	20,276
Total	446	227	6,275	835	467	328	451	11	528	5,300	464	137	5,043	106	20,613
Above Ground.															
MALES.															
Ages 11 to 13	—	—	1	—	2	—	—	—	—	4	—	—	1	—	8
„ 13 to 18	17	28	410	120	101	22	26	—	25	612	31	1	451	12	1,856
„ above 18	179	179	2,164	424	770	437	149	15	261	4,612	297	68	2,620	41	12,216
FEMALES.															
Ages 11 to 13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
„ 13 to 18	—	1	—	—	—	—	7	—	—	5	—	—	101	—	114
„ above 18	—	1	—	—	—	—	4	1	—	25	2	—	305	7	345
Total	196	209	2,575	544	873	459	186	16	286	5,258	330	69	3,478	60	14,539
Total below and above ground	642	436	8,850	1,379	1,340	787	637	27	814	10,558	794	206	8,521	166	35,157
Total in preceding Year... ...	676	441	9,167	1,531	1,265	791	617	32	779	10,085	683	214	7,775	175	34,231
Number of Mines at work ..	23	8	103	64	67	15	26	2	72	138	24	7	190	5	724
Number in preceding Year ...	22	8	103	61	67	16	25	2	73	173	22	7	169	5	753

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PERSONS EMPLOYED.

QUARRIES ACT

TABLE No. 6.—**Persons Employed** in and about the QUARRIES (more than 20 feet deep) of GREAT BRITAIN and IRELAND, with the ISLE OF MAN, during the Year 1899.

PERSONS EMPLOYED.	INSPECTION DISTRICT.													Total.
	1	2	3	4	5	6		7	8	9	10	11	12	13	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire.	Manchester. Ireland.	Liverpool.	Midland.	North Wales, &c.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Inside the Quarries.															
MALES:															
Ages 11 to 13	—	—	—	—	1	1	3	—	2	1	—	1	6	1	16
„ 13 to 18	120	149	179	194	137	91	128	12	509	402	74	171	607	53	2,826
„ above 18	4,916	3,420	2,936	2,921	4,303	2,773	2,745	357	10,108	11,194	2,105	2,388	9,307	1,832	61,905
FEMALES:															
Ages 11 to 13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
„ 13 to 18	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
„ above 18	—	—	—	1	—	—	—	—	—	—	—	1	2	8	12
Total	5,036	3,569	3,115	3,116	4,441	2,865	2,876	369	10,619	11,597	2,179	2,561	9,922	1,894	64,159
Outside the Quarries.															
MALES:															
Ages 11 to 13	1	—	—	—	2	—	3	—	10	—	1	—	15	—	32
„ 13 to 18	219	272	162	49	430	96	176	50	509	1,170	173	92	475	34	3,907
„ above 18	3,105	2,056	1,092	554	4,275	1,648	1,453	258	3,196	6,273	1,055	601	3,685	526	29,777
FEMALES:															
Ages 11 to 13	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
„ 13 to 18	23	—	1	2	1	—	—	—	—	—	2	1	—	—	30
„ above 18	21	6	4	—	8	—	—	7	—	5	6	22	11	—	90
Total	3,369	2,334	1,259	605	4,716	1,744	1,632	315	3,715	7,448	1,237	716	4,186	560	33,836
Total Inside and Outside ..	**8,405**	**5,903**	**4,374**	**3,721**	**9,157**	**4,609**	**4,508**	**684**	**14,334**	**19,045**	**3,416**	**3,277**	**14,108**	**2,454**	**97,995***
Total in preceding Year ...	8,372	6,288	4,848	4,175	11,497	6,657	4,653	1,373	24,561	28,139	6,272	8,655	16,199	2,789	134,478
Number of Quarries at work	**653**	**310**	**264**	**246**	**576**	**259**	**541**	**36**	**940**	**692**	**306**	**423**	**1,473**	**270**	**6,994**
Number in preceding Year ...	668	297	250	243	608	262	539	39	909	678	301	419	1,446	289	6,948

* For explanation of apparent decrease, *see* remarks on p. 8.

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OUTPUT OF

COAL MINES

TABLE No. 7.—**Output of Minerals** from Mines under the COAL MINES

DESCRIPTION OF MINERAL.	INSPECTION						
	1.	2.	3.	4.	5.	6.	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester.	
						N. and E. Lancashire. and Kent.	Ireland.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Coal	17,749,504	13,393,108	23,753,161	24,405,784	26,901,495	11,033,823	125,420
Clay and Shale, other than Fireclay and Oil Shale.	42,407	—	—	17,344	(a) 5,820	32,643	—
Fireclay	422,534	396,265	371,239	338,091	397,187	141,391	5,861
Iron Pyrites	—	—	—	—	—	642	—
Ironstone	140,429	703,156	—	5,612,742	198,986	—.	—
Limestone	—	32,395	—	—	—	—	—
Oil Shale	2,194,095	14,154	—	—	—	—	—
Petroleum	—	—	—	—	—	—	—
Sand	—	—	—	—	3,850	—	—
Sandstone (including "Ganister")	13,031	8,315	3,492	—	76,155	—	—
Total	**20,562,000**	**14,547,393**	**24,127,892**	**30,373,961**	**27,583,493**	**11,208,499**	**131,281**
Total in preceding Year ...	19,708,018	14,333,670	23,384,407	30,434,977	26,312,698	11,061,682	136,923
Output per person employed:							
Below ground	465	422	393	484	368	360	179
Above and below ground ...	384	344	311	366	290	288	132

(a) Alum Shale.

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MINERALS.

REGULATION ACT.

REGULATION ACT, in GREAT BRITAIN and IRELAND, during the Year 1899.

DISTRICT. *						Total.	Total in preceding Year.	DESCRIPTION OF MINERAL.
7. Liverpool.	8. Midland.	10. North Staffordshire.	11. South Staffordshire.	12. South Western.	13. South Wales.			
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
16,548,386	27,580,782	6,799,237	9,412,584	13,753,317	28,628,767	220,085,368†	202,042,243	Coal.
—	—	65,169	—	—	1,450	164,833	133,110	Clay and Shale, other than Fireclay and Oil Shale.
96,572	165,560	50,833	346,088	91,541	107,929	2,931,091	2,783,219	Fireclay.
70	8,212	160	735	—	—	9,819	9,524	Iron Pyrites.
100	3,883	1,044,909	51,673	13,021	6,969	7,775,868	7,901,046	Ironstone.
—	—	—	—	—	—	32,395	38,633	Limestone.
2,375	—	200	—	—	—	2,210,824	2,137,993	Oil Shale.
—	—	5	—	—	—	5	6	Petroleum.
—	—	—	—	—	—	3,850	4,426	Sand.
—	—	1,000	—	2,988	50	105,031	111,754	Sandstone (including "Ganister").
16,647,503	27,758,437	7,961,513	9,811,080	13,860,867	28,745,165	233,319,084	215,161,954	Total.
16,730,780	25,957,409	7,837,174	9,783,505	9,517,902	19,962,809	215,161,954	—	Total in preceding Year.
								Output per person employed :
381	412	397	488	347	350	400	379	Below ground.
308	327	302	360	292	295	320	304	Above and below ground.

* No. 9 is a District for the purposes of the Metalliferous Mines Act and Quarries Act only

† The quantity of Coal obtained from open quarries (p. 19) was 9,413 tons, making the total output of Coal 220,094,781 tons, against 202,054,516 tons in 1898.

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OUTPUT OF

METALLIFEROUS MINES

TABLE No. 8.—**Output of Minerals** from MINES under the METALLIFEROUS MINES

DESCRIPTION OF MINERAL.	INSPECTION						
	1	2	3	4	5	6	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester.	
						North and East Lancashire.	Ireland.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Alum Clay (Bauxite)	—	—	—	—	—	—	8,009
Arsenic	—	—	—	—	—	—	—
Arsenical Pyrites	—	—	—	—	—	—	—
Barytes	—	927	7,341	5,116	—	—	3,278
Chalk	—	—	—	—	—	—	—
Chert and Flint	—	—	—	—	—	—	—
Clay and Shale	22,000	251(*a*)	—	—	—	940	—
Copper Ore and Copper Precipitate ...	—	—	7	—	—	—	533
Fluor Spar	—	—	—	100	—	—	—
Gold Ore	—	—	—	—	—	—	—
Gypsum	—	—	26,451	2,000	—	—	—
Igneous Rocks	—	—	—	84,333	—	—	—
Iron Ore	—	—	1,808,674	16,960	—	—	102,262
Iron Pyrites	—	—	—	—	—	—	2,411
Lead Ore	369	1,848	959	4,866	752	—	40
Limestone	280,501	3,219	4,745	—	—	—	—
Manganese Ore	—	—	—	—	—	—	—
Ochre and Umber	—	—	—	—	—	—	1,105
Rock Salt	—	—	—	—	—	99,405	34,773
Sand	—	—	—	—	—	—	—
Sandstone	9,100	23,699	75	920	92,811	83,543	—
Slate	—	—	6,558	5,043	—	—	—
Tin Ore (dressed)	—	—	—	—	—	—	—
Uranium Ore	—	—	—	—	—	—	—
Wolfram	—	—	—	—	—	—	—
Zinc Ore	—	34	7,788	92	—	—	—
Total	**311,970**	**29,978**	**1,862,598**	**119,430**	**93,563**	**183,888**	**152,411**
Total in preceding Year	290,984	34,072	2,039,425	130,177	81,180	164,604	173,098

(*a*) Honestone.

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MINERALS.

REGULATION ACT.

REGULATION ACT, in GREAT BRITAIN and IRELAND, with the ISLE of MAN, during the Year 1899.

DISTRICT.									
7	8	9	10	11	12	13	Total.	TOTAL IN PRECEDING YEAR.	DESCRIPTION OF MINERAL.
Liverpool.	Midland.	North Wales and South Eastern.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.			
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
—	—	—	—	—	—	—	8,009	12,402	Alum Clay (Bauxite).
—	—	—	—	—	3,829	—	3,829	4,174	Arsenic.
—	—	—	—	—	13,429	—	13,429	10,823	Arsenical Pyrites.
—	230	1,092	5,680	—	—	—	23,664	21,175	Barytes.
—	1,410	3,095	—	53	—	—	4,558	1,878	Chalk.
—	2,069	125	—	335	—	—	2,529	2,313	Chert and Flint.
—	1,469	15,652	—	—	73,231	—	113,543	86,641	Clay and Shale.
—	—	1,617	—	—	6,162	—	8,319	9,131	Copper Ore and Copper Precipitate.
—	633	—	—	—	—	—	733	56	Fluor Spar.
—	—	3,047	—	—	—	—	3,047	703	Gold Ore.
—	62,423	18,454	48,998	—	—	—	158,326	134,195	Gypsum.
—	—	12,128	—	—	—	—	96,461	99,440	Igneous Rocks.
—	—	1,019	—	—	26,881	—	1,955,796	2,167,100	Iron Ore.
—	—	—	—	—	—	—	2,411	2,584	Iron Pyrites.
—	4,266	15,489	1,468	—	—	933	30,990	32,679	Lead Ore.
—	18,004(*b*)	811	9,285	94,852	177,499	—	588,916	555,625(*c*)	Limestone.
—	87	328	—	—	—	—	415	231	Manganese Ore.
—	275	1,150	—	—	1,526	—	4,056	2,800	Ochre and Umber.
—	—	—	44,832	—	—	—	179,010	182,770	Rock Salt.
—	1,000	26,341	—	—	—	—	27,341	31,130	Sand.
2,500	3,764	13,939	2,679	—	2,938	4,000	239,968	246,724	Sandstone.
—	—	166,512	—	—	485	—	178,598	177,664	Slate.
—	—	—	—	—	5,662	—	5,662	6,588	Tin Ore (dressed).
—	—	—	—	—	7	—	7	26	Uranium Ore.
—	—	—	—	—	89	—	89	324	Wolfram.
—	453	13,980	737	—	42	9	23,135	23,552	Zinc Ore.
2,500	96,083	294,779	113,679	95,240	311,780	4,942	3,672,841	3,812,728	Total.
2,500	95,740	283,759	125,191	95,784	291,721	4,493	3,812,728	—	Total in preceding Year.

(*b*) Including 2,587 tons of Calc Spar.

(*c*) Including 3,230 tons of Calc Spar.

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OUTPUT OF QUARRIES

TABLE No. 9.—**Output of Minerals** from QUARRIES (more than 20 feet deep)

DESCRIPTION OF MINERAL.	INSPECTION							
	1	2	3	4	5	6		7
						Manchester.		
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	North and East Lancashire.	Ireland.	Liverpool.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Barytes	—	—	—	—	—	—	—	—
Chalk	—	—	—	—	88,070	—	—	—
Chert and flint	—	—	—	450	180	—	1,152	—
Clays, other than china clay	174,914	130,913	296,201	170,397	1,065,083	872,895	100,082	297,094
China clay...	—	—	—	—	—	—	—	—
China stone	—	—	—	—	—	—	—	—
Coal	—	101	—	—	2,667	50	—	—
Fluor spar...	—	—	—	—	—	—	—	—
Gravel and sand	125,969	194,614	55,844	20,839	40,804	21,010	66,055	2,887
Gypsum	—	—	17,407	4,009	—	—	—	—
Igneous rocks	880,541	360,750	220,840	236,309	—	—	207,923	—
Ironstone	—	—	—	—	1,530,372	—	—	—
Lead ore	—	—	—	—	—	—	—	—
Limestone, other than chalk	128,665	82,937	1,227,007	2,039,721	696,747	318,241	508,347	—
Mica	—	—	—	—	—	—	—	—
Ochre and umber ...	—	—	—	—	—	—	—	—
Phosphate of lime ...	—	—	—	—	—	—	—	—
Sandstone, quartzite, &c.	873,450	660,563	238,644	113,524	699,967	618,879	28,613	100,751
Slate	10,471	30,580	18,264	1,060	2,506	—	5,443	—
Sulphate of strontia ...	—	—	—	—	—	—	—	—
Tin ore (dressed) ...	—	—	—	—	—	—	—	—
Total	**2,194,010**	**1,460,458**	**2,074,207**	**2,586,309**	**4,126,396**	**1,831,075**	**917,615**	**400,732**
Total in preceding Year	2,270,086	1,424,569	1,984,832	2,533,371	3,891,145	2,094,803	1,003,658	432,061

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MINERALS.

ACT.

in GREAT BRITAIN and IRELAND, with the ISLE OF MAN, during the Year 1899.

DISTRICTS.								
8	9	10	11	12	13	Total.	Total in preceding Year.	DESCRIPTION OF MINERAL.
Midland.	North Wales and South Eastern.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.			
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
—	—	—	—	1,000	—	1,000	1,050	Barytes.
160,901	3,783,058	—	407,294	234,251	—	4,673,574	4,296,136	Chalk
2,095	39,262	—	18,458	3,456	1,252	66,305	79,744	Chert and flint.
3,849,359	813,442	666,712	1,761,772	999,973	100,901	11,299,738	11,205,897	Clays, other than china clay.
—	—	—	—	503,735	—	503,735	483,499	China clay.
—	—	—	—	57,737	—	57,737	59,725	China stone
608	—	180	5,807	—	—	9,413	12,273	Coal.
50	—	—	—	—	—	50	—	Fluor spar.
458,051	314,126	55,506	303,672	74,839	5,869	1,740,085	1,590,134	Gravel and sand.
26,946	—	—	—	5,875	—	54,237	61,833	Gypsum.
1,238,738	497,157	272,037	181,574	271,265	246,330	4,613,464	4,378,868	Igneous rocks.
1,802,563	—	1,561	4,007	70,252	—	3,408,755	2,759,490	Ironstone.
9	—	—	—	—	—	9	306	Lead ore.
2,375,913	1,236,252	435,620	2,534	2,020,525	609,070	11,681,579	11,386,320	Limestone, other than chalk.
—	—	—	—	650	—	650	907	Mica.
—	—	—	—	12,258	—	12,258	16,877	Ochre and umber.
21	—	—	—	—	—	21	—	Phosphate of lime.
305,080	254,023	198,897	97,957	331,263	346,014	4,867,625	4,883,637	Sandstone, &c.
225	339,519	—	—	47,574	5,600	461,242	491,195	Slate.
—	—	—	—	475	—	475	1,242	Sulphate of strontia.
—	—	—	—	21	—	21	46	Tin ore (dressed).
10,220,559	7,276,839	1,630,513	2,783,075	4,635,149	1,315,036	43,451,973	41,709,179	Total.
9,386,900	6,928,338	1,485,125	2,674,788	4,445,385	1,154,064	41,709,125	—	Total in preceding Year

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TABLE No. 10.—**Output of Minerals** from certain WORKINGS not included under the

DESCRIPTION OF MINERAL.	DISTRICT IN							
	1	2	3	4	5	6		7
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester.		Liverpool.
						North and East Lancashire.	Ireland.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Arsenical pyrites ...	—	—	—	—	—	—	—	—
Bog ore	—	—	—	—	—	—	4,321	—
Iron ore	—	—	—	—	424,396	—	—	—
Ochre	—	—	—	—	—	—	—	—
Phosphate of lime ...	—	—	—	—	—	—	—	—
Salt from brine ...	—	—	11,899	242,091	—	109,023	12,282	—
Sulphate of strontia ...	—	—	—	—	—	—	—	—
Tin ore, from streams, foreshores, &c.	—	—	—	—	—	—	—	—
Wolfram	—	—	—	—	—	—	—	—

The object of this table is to afford information concerning the output of certain metallic ores and a few other mineral products from workings based upon voluntary returns furnished by the courtesy of the owners. The table does not include any account of the large quantities of latter minerals in the absence of statutory powers.

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MINERALS.

PROVISIONS of the MINES REGULATION ACTS, or the QUARRIES ACT, during the Year 1899.

WHICH SITUATED.						Total.	Total in preceding Year.	DESCRIPTION OF MINERAL.
8	9	10	11	12	13			
Midland.	North Wales and South Eastern.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.			
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
—	—	—	—	90	—	90	321	Arsenical pyrites.
—	—	—	—	—	—	4,321	5,418	Bog ore.
896,515	—	—	—	—	—	1,320,911	1,349,302	Iron ore.
—	—	—	—	—	—	—	150	Ochre.
1,325	—	—	100	—	—	1,425	1,550	Phosphate of lime.
—	—	1,189,026	171,562	—	—	1,735,883	1,695,895	Salt from brine.
—	—	—	—	12,154	—	12,154	11,699	Sulphate of strontia.
—	—	—	—	709	—	709	746	Tin ore, from streams, foreshores, &c.
—	—	—	—	5	—	5	2	Wolfram.

ot included either under the Mines Acts or the Quarries Act, in order to make the statistics as complete as possible. The figures given are rick-earth, clay, gravel, sand, stone, &c. raised from workings less than 20 feet deep. It is impossible to obtain complete statistics of these

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SEPARATE FATAL ACCIDENTS.

COAL MINES REGULATION ACT.

TABLE No. 11.—**Separate Fatal Accidents** in and about the MINES of GREAT BRITAIN and IRELAND (including those on Private Branch Railways and Tramways, and in Washing and Coking Coal), during the Year 1899.

PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT.													TOTAL.
	1	2	3	4	5	6		7	8	10	11	12	13	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire, and Kent.	Manchester. Ireland.	Liverpool.	Midland.	North Staffordshire.	South Staffordshire.	South Western. *	South Wales.	
Explosions of Fire-damp or Coal Dust.	**5**	**8**	**2**	**2**	**1**	—	—	**1**	—	—	**2**	—	**2**	**23**
Falls of Ground. Falls of Side	12	6	9	12	7	5	—	8	7	4	3	8	20	[illegible]
Falls of Roof	23	16	31	45	29	22	2	24	34	12	14	17	57	[illegible]
Total	**35**	**22**	**40**	**57**	**36**	**27**	**2**	**32**	**41**	**16**	**17**	**25**	**77**	**427**
Shaft Accidents. Overwinding	—	—	—	—	—	—	—	—	1	—	—	—	—	[illegible]
Ropes or Chains breaking	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Whilst ascending or descending by Machinery.	3	1	3	1	2	—	—	1	—	—	—	4	4	[illegible]
Falling into Shaft from Surface ...	1	—	2	—	—	1	—	—	1	—	—	—	1	[illegible]
Things falling from Surface ...	1	—	—	—	—	—	—	—	1	—	—	1	2	[illegible]
Falling from part way down ...	3	3	—	2	1	1	—	2	1	1	—	—	1	[illegible]
Things falling from part way down	1	—	—	1	—	—	—	1	1	1	—	—	2	[illegible]
Miscellaneous...	—	—	2	—	1	—	—	3	3	—	—	—	4	[illegible]
Total	**9**	**5**	**7**	**4**	**4**	**2**	—	**7**	**8**	**2**	—	**5**	**14**	**67**
Miscellaneous Underground. By Explosives...	3	3	1	3	4	3	—	—	—	—	2	1	5	[illegible]
Suffocation by Natural Gases ...	—	—	—	1	—	—	—	3	—	1	—	—	—	[illegible]
By Underground Fires	—	1	—	1	—	—	—	—	—	—	—	—	—	[illegible]
Irruptions of Water	—	—	—	—	—	—	—	1	—	—	—	—	2	[illegible]
Haulage :—														
On Inclined and Engine Planes...	6	3	5	7	6	9	—	8	3	6	1	—	19	[illegible]
Ropes or Chains breaking ...	2	1	—	—	—	—	—	—	—	—	—	—	4	[illegible]
By Trams and Tubs	6	4	11	13	8	2	—	2	9	3	4	11	16	[illegible]
By Machinery...	2	—	—	1	2	1	—	1	—	—	1	1	1	[illegible]
Sundries	3	1	1	6	1	2	—	—	—	1	2	—	5	[illegible]
Total	**22**	**13**	**18**	**32**	**21**	**17**	—	**15**	**12**	**11**	**10**	**13**	**52**	**236**
Total Underground ...	**71**	**48**	**67**	**95**	**62**	**46**	**2**	**55**	**61**	**29**	**29**	**43**	**145**	**753**
On Surface. By Machinery	—	1	2	3	2	—	—	2	2	—	—	2	1	[illegible]
Boiler Explosions	—	—	—	—	—	1	—	—	—	—	—	—	—	[illegible]
Railways, Sidings, or Tramways ...	10	6	9	5	11	1	—	3	5	2	2	3	12	[illegible]
Miscellaneous	3	3	6	3	5	2	—	2	3	2	—	1	—	[illegible]
Total on Surface ...	**13**	**10**	**17**	**11**	**18**	**4**	—	**7**	**10**	**4**	**2**	**6**	**13**	**115**
Gross Total in 1899	**84**	**58**	**84**	**106**	**80**	**50**	**2**	**62**	**71**	**33**	**31**	**49**	**158**	**868**
Total in preceding Year	71	70	70	93	90	61	2	78	69	31	28	48	117	[illegible]

* No. 9 District is under the Metalliferous Mines Act only.

Increase 40.

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DEATHS FROM ACCIDENTS.

COAL MINES REGULATION ACT.

TABLE No. 12.—**Deaths** caused by the aforesaid ACCIDENTS in and about the MINES of GREAT BRITAIN and IRELAND (including those on Private Branch Railways and Tramways, and in Washing and Coking Coal), during the Year 1899.

PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT.													
	1	2	3	4	5	6		7	8	10	11	12	13	TOTAL
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire and Kent.	Manchester. Ireland.	Liverpool.	Midland.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Explosions of Fire-damp or Coal Dust.	**7**	**9**	**2**	**7**	**2**	—	—	**2**	—	—	**5**	—	**20**	**54**
Falls of Ground. Falls of Side	12	6	9	12	7	5	—	8	7	4	3	8	20	101
Falls of Roof	24	16	31	45	29	23	2	28	35	12	14	17	60	336
Total	**36**	**22**	**40**	**57**	**36**	**28**	**2**	**36**	**42**	**16**	**17**	**25**	**80**	**437**
Shaft Accidents. Overwinding	—	—	—	—	—	—	—	—	1	—	—	—	—	1
Ropes or Chains breaking	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Whilst ascending or descending by Machinery.	3	1	3	1	2	—	—	1	—	—	—	4	5	20
Falling into Shaft from Surface ...	1	—	2	—	—	1	—	—	1	—	—	—	1	6
Things falling from Surface ...	1	—	—	—	—	—	—	—	1	—	—	1	2	5
Falling from part way down ...	3	3	—	3	1	1	—	2	1	1	—	—	1	16
Things falling from part way down	1	—	—	1	—	—	—	1	1	1	—	—	2	7
Miscellaneous...	—	—	2	—	1	—	—	3	3	—	—	—	4	13
Total	**9**	**5**	**7**	**5**	**4**	**2**	—	**7**	**8**	**2**	—	**5**	**15**	**69**
By Explosives	3	4	1	3	4	5	—	—	—	—	3	1	5	29
Suffocation by Natural Gases ...	—	—	—	1	—	—	—	4	—	1	—	—	—	6
By Underground Fires	—	1	—	1	—	—	—	—	—	—	—	—	—	2
Irruptions of Water	—	—	—	—	—	—	—	1	—	—	—	—	2	3
Haulage :—														
On Inclined and Engine Planes...	6	3	5	7	6	9	—	8	3	6	1	—	19	73
Ropes or Chains breaking ...	2	1	—	—	—	—	—	—	—	—	—	—	4	7
By Trams and Tubs	6	4	11	13	8	2	—	2	9	3	4	11	16	89
By Machinery...	2	—	—	1	2	1	—	1	—	—	1	1	1	10
Sundries	3	1	1	6	1	2	—	—	—	1	2	—	5	22
Total	**22**	**14**	**18**	**32**	**21**	**19**	—	**16**	**12**	**11**	**11**	**13**	**52**	**241**
Total Underground ...	**74**	**50**	**67**	**101**	**63**	**49**	**2**	**61**	**62**	**29**	**33**	**43**	**167**	**801**
By Machinery...	—	1	2	3	2	—	—	2	2	—	—	2	1	15
Boiler Explosions	—	—	—	—	—	1	—	—	—	—	—	—	—	1
Railways, Sidings, or Tramways ...	10	6	9	5	11	1	—	3	5	2	2	3	12	69
Miscellaneous...	3	3	6	3	5	2	—	2	3	2	—	1	—	30
Total on Surface ...	**13**	**10**	**17**	**11**	**18**	**4**	—	**7**	**10**	**4**	**2**	**6**	**13**	**115**
Gross Total in 1899	**87**	**60**	**84**	**112**	**81**	**53**	**2**	**68**	**72**	**33**	**35**	**49**	**180**	**916**
Total in preceding Year	74	85	70	101	95	61	4	81	105	31	32	49	120	908

* No. 9 District is under the Metalliferous Mines Act only.

Increase 8.

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SEPARATE FATAL ACCIDENTS.

METALLIFEROUS MINES REGULATION ACT.

TABLE No. 13.—**Separate Fatal Accidents** in and about the MINES of GREAT BRITAIN and IRELAND, together with the ISLE OF MAN, during the Year 1899.

PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT.													TOTAL.
	1	2	3	4	5	6		7	8	9	10	11	12	13	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire.	Manchester. Ireland.	Liverpool.	Midland.	North Wales, &c.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Explosions of Fire-damp ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Falls of Ground	1	—	8	1	—	—	1	—	—	3	—	—	2	—	16
Shaft Accidents.															
Overwinding	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ropes or Chains breaking	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Whilst ascending or descending by Machinery.	—	—	1	—	—	—	—	—	—	2	—	—	—	—	3
Falling into Shaft from Surface ...	—	—	2	—	1	—	—	—	—	—	—	—	—	—	3
Things falling from Surface ...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Falling from part way down ...	—	—	—	—	—	—	—	—	—	1	1	—	2	—	4
Things falling from part way down	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Miscellaneous...	—	—	1	—	—	—	—	—	—	—	1	—	—	—	2
Total	—	—	5	—	1	—	—	—	—	3	2	—	3	—	14
Miscellaneous Underground.															
By Explosives...	—	—	1	—	—	—	—	—	1	2	—	—	1	—	5
Suffocation by Natural Gases ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By Underground Fires	—	—	1	—	—	—	1	—	—	—	—	—	—	—	2
Irruptions of Water	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Haulage:—															
On Inclined and Engine Planes...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Ropes or Chains breaking ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By Trams and Tubs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By Machinery...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Sundries	—	—	—	—	—	—	—	—	—	1	—	—	1	—	2
Total	—	—	4	—	—	—	1	—	1	3	—	—	2	—	11
Total Underground ...	1	—	17	1	1	—	2	—	1	9	2	—	7	—	41
On Surface.															
By Machinery...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Boiler Explosions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Railways, Sidings, or Tramways ...	—	—	1	—	—	—	—	—	—	—	—	—	1	—	2
Miscellaneous...	—	—	—	—	1	—	—	—	—	2	—	—	—	—	3
Total on Surface ...	—	—	2	—	1	—	—	—	—	2	—	—	1	—	6
Gross Total in 1899	1	—	19	1	2	—	2	—	1	11	2	—	8	—	47
Total in preceding Year	1	—	8	2	1	—	—	—	1	7	—	—	11	—	31

Increase 16.

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DEATHS FROM ACCIDENTS.

METALLIFEROUS MINES REGULATION ACT.

TABLE NO. 14.—Deaths caused by the aforesaid ACCIDENTS in and about the MINES of GREAT BRITAIN and IRELAND together with the ISLE OF MAN, during the Year 1899.

PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT.													TOTAL.
	1	2	3	4	5	6		7	8	9	10	11	12	13	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire.	Manchester. Ireland.	Liverpool.	Midland.	North Wales, &c.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Explosions of Fire-damp ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Falls of Ground	1	—	9	1	—	—	1	—	—	3	—	—	4	—	19
Shaft Accidents.															
Overwinding	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ropes or Chains breaking	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Whilst ascending or descending by Machinery.	—	—	1	—	—	—	—	—	—	2	—	—	—	—	3
Falling into Shaft from Surface ...	—	—	2	—	1	—	—	—	—	—	—	—	—	—	3
Things falling from Surface ...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Falling from part way down ...	—	—	—	—	—	—	—	—	—	1	1	—	2	—	4
Things falling from part way down	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Miscellaneous	—	—	1	—	—	—	—	—	—	—	1	—	—	—	2
Total	—	—	5	—	1	—	—	—	—	3	2	—	3	—	14
Miscellaneous Underground.															
By Explosives...	—	—	1	—	—	—	—	—	1	2	—	—	1	—	5
Suffocation by Natural Gases ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By Underground Fires	—	—	4	—	—	—	4	—	—	—	—	—	—	—	8
Irruptions of Water	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Haulage:—															
On Inclined and Engine Planes...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Ropes or Chains breaking ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By Trams and Tubs	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By Machinery...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Sundries	—	—	—	—	—	—	—	—	—	1	—	—	1	—	2
Total	—	—	7	—	—	—	4	—	1	3	—	—	2	—	17
Total Underground ...	1	—	21	1	1	—	5	—	1	9	2	—	9	—	50
On Surface.															
By Machinery...	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Boiler Explosions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Railways, Sidings, or Tramways ...	—	—	1	—	—	—	—	—	—	—	—	—	1	—	2
Miscellaneous	—	—	—	—	1	—	—	—	—	2	—	—	—	—	3
Total on Surface ...	—	—	2	—	1	—	—	—	—	2	—	—	1	—	6
Gross Total in 1899	1	—	23	1	2	—	5	—	1	11	2	—	10	—	56
Total in preceding Year	1	—	9	2	1	—	—	—	1	8	—	—	11	—	33

Increase **23.**

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SEPARATE FATAL ACCIDENTS.

QUARRIES ACT.

TABLE No. 15.—**Separate Fatal Accidents** in and about the QUARRIES (more than 20 feet deep) of GREAT BRITAIN and IRELAND, together with the ISLE OF MAN, during the Year 1899.

	PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT. 1 East Scotland.	2 West Scotland.	3 Newcastle.	4 Durham.	5 Yorkshire and Lincolnshire.	6 Manchester. N. and E. Lancashire.	6 Manchester. Ireland.	7 Liverpool.	8 Midland.	9 North Wales, &c.	10 North Staffordshire.	11 South Staffordshire.	12 South Western.	13 South Wales.	TOTAL.
Inside the Quarries (*i.e.*, inside the actual Pits, Holes, or Excavations).	Falls of Ground. — From beyond the Person's own working place.	1	2	1	—	2	—	—	—	3	2	1	—	4	—	16
	Falls of Ground. — From the Person's own working place.	4	1	1	1	3	1	4	—	4	5	1	2	1	—	23
	Falls of Ground. — **Total**	**5**	**3**	**2**	**1**	**5**	**1**	**4**	—	**7**	**7**	**2**	**2**	**5**	—	**44**
	By Blasting. — While charging or tamping	—	—	—	—	—	—	—	—	1	2	—	—	—	—	3
	By Blasting. — From Stones projected by Shots.	—	—	—	1	—	—	—	—	—	—	—	—	2	—	3
	By Blasting. — From Miss-fires	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	By Blasting. — Miscellaneous...	1	1	—	—	—	—	—	—	—	—	—	—	—	—	2
	By Blasting. — **Total**	**1**	**1**	—	**1**	—	—	—	—	**1**	**2**	—	—	**2**	—	**8**
	During Descent or Ascent. — Falling from Paths, Steps, or Ladders.	1	—	—	—	—	1	—	—	—	—	—	—	—	—	2
	During Descent or Ascent. — When ascending or descending by machinery.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	During Descent or Ascent. — Miscellaneous	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	During Descent or Ascent. — **Total**	**1**	—	—	—	—	**1**	—	—	—	—	—	—	—	—	**2**
	Miscellaneous. — Ropes or Chains breaking ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Miscellaneous. — Machinery	—	—	—	1	—	—	1	—	—	1	—	—	—	—	3
	Miscellaneous. — Boilers bursting	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Miscellaneous. — Inclined and Engine Planes	—	—	—	—	—	—	—	—	2	—	—	—	—	—	2
	Miscellaneous. — Railways, Sidings, or Tramways.	—	—	—	—	—	—	—	—	1	2	—	2	3	—	8
	Miscellaneous. — Falling from Ledges... ...	—	—	—	2	4	—	1	—	—	3	1	—	—	2	13
	Miscellaneous. — Sundries	3	1	2	—	4	2	1	—	—	3	—	—	2	—	18
	Miscellaneous. — **Total**	**3**	**1**	**2**	**3**	**8**	**2**	**3**	—	**3**	**9**	**1**	**2**	**5**	**2**	**44**
	Total inside Quarries	**10**	**5**	**4**	**5**	**13**	**4**	**7**	—	**11**	**18**	**3**	**4**	**12**	**2**	**96**
Outside the Quarries, at Factories or Workshops connected with Quarries, situated within one mile of them, and belonging to the same Owner.	Machinery	1	2	1	—	2	—	—	—	1	1	—	—	—	—	8
	Hot Liquid or Molten Metal or other Substance in Vat or Pan.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Boiler Explosions	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
	Escape of Gas, Steam, or Metal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Inclined and Engine Planes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Railways, Sidings, or Tramways	—	—	1	1	—	3	—	—	—	—	—	—	1	—	6
	Miscellaneous	—	—	—	—	—	—	—	—	1	1	—	—	2	—	4
	Total outside Quarries	**1**	**2**	**2**	**1**	**2**	**3**	**1**	—	**2**	**2**	—	—	**3**	—	**19**
Gross Total in 1899		**11**	**7**	**6**	**6**	**15**	**7**	**8**	—	**13**	**20**	**3**	**4**	**15**	**2**	**117**
Total in preceding Year		11	9	6	3	12	8	3	—	26	24	2	9	12	6	131

Decrease 14.

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DEATHS FROM ACCIDENTS.

QUARRIES ACT.

TABLE No. 16.—**Deaths** caused by the aforesaid ACCIDENTS in and about the QUARRIES (more than 20 feet deep) of GREAT BRITAIN and IRELAND, together with the ISLE OF MAN, during the Year 1899.

PLACE OR CAUSE OF ACCIDENT.		INSPECTION DISTRICT.														
		1	2	3	4	5	6		7	8	9	10	11	12	13	TOTAL.
		East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire.	Manchester. Ireland.	Liverpool.	Midland.	North Wales, &c.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Inside the Quarries (*i.e.*, inside the actual Pits, Holes, or Excavations).	Falls of Ground. From beyond the Person's own working place.	1	2	1	—	2	—	—	—	3	2	1	—	4	—	16
	Falls of Ground. From the Person's own working place.	4	1	1	1	3	1	4	—	4	5	1	2	1	—	28
	Falls of Ground. Total	**5**	**3**	**2**	**1**	**5**	**1**	**4**	—	**7**	**7**	**2**	**2**	**5**	—	**44**
	By Blasting. While charging or tamping	—	—	—	—	—	—	—	—	1	2	—	—	—	—	3
	By Blasting. From Stones projected by Shots.	—	—	—	1	—	—	—	—	—	—	—	—	2	—	3
	By Blasting. From Miss-fires	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	By Blasting. Miscellaneous	1	1	—	—	—	—	—	—	—	—	—	—	—	—	2
	By Blasting. Total	**1**	**1**	—	**1**	—	—	—	—	**1**	**2**	—	—	**2**	—	**8**
	During Descent or Ascent. Falling from Paths, Steps, or Ladders.	1	—	—	—	—	1	—	—	—	—	—	—	—	—	2
	During Descent or Ascent. When ascending or descending by machinery.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	During Descent or Ascent. Miscellaneous	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	During Descent or Ascent. Total	**1**	—	—	—	—	**1**	—	—	—	—	—	—	—	—	**2**
	Miscellaneous. Ropes or Chains breaking	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Miscellaneous. Machinery	—	—	—	1	—	—	1	—	—	1	—	—	—	—	3
	Miscellaneous. Boiler Explosions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Miscellaneous. Inclined and Engine Planes	—	—	—	—	—	—	—	—	2	—	—	—	—	—	2
	Miscellaneous. Railways, Sidings, or Tramways.	—	—	—	—	—	—	—	—	1	2	—	2	3	—	8
	Miscellaneous. Falling from Ledges	—	—	—	2	4	—	1	—	—	3	1	—	—	2	13
	Miscellaneous. Sundries	3	1	2	—	4	2	1	—	—	3	—	—	2	—	18
	Miscellaneous. Total	**3**	**1**	**2**	**3**	**8**	**2**	**3**	—	**3**	**9**	**1**	**2**	**5**	**2**	**44**
	Total inside Quarries	**10**	**5**	**4**	**5**	**13**	**4**	**7**	—	**11**	**18**	**3**	**4**	**12**	**2**	**98**
Outside the Quarries, at Factories or Workshops, connected with Quarries, situated within one mile of them and belonging to the same Owner.	Machinery	1	2	1	—	2	—	—	—	1	1	—	—	—	—	8
	Hot Liquid or Molten Metal or other Substance in Vat or Pan.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Boiler Explosions	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
	Escape of Gas, Steam, or Metal.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Inclined and Engine Planes	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Railways, Sidings, or Tramways.	—	—	1	1	—	3	—	—	—	—	—	—	1	—	6
	Miscellaneous	—	—	—	—	—	—	—	—	1	1	—	—	2	—	4
	Total outside Quarries	**1**	**2**	**2**	**1**	**2**	**3**	**1**	—	**2**	**2**	—	—	**3**	—	**19**
Gross Total in 1899		**11**	**7**	**6**	**6**	**15**	**7**	**8**	—	**13**	**20**	**3**	**4**	**15**	**2**	**117**
Total in preceding Year		12	9	6	3	13	8	3	—	26	25	2	9	12	6	134

Decrease **17.**

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SEPARATE NON-FATAL ACCIDENTS.

COAL MINES REGULATION ACT.

TABLE No. 17.—**Separate Non-Fatal Accidents** in and about the MINES of GREAT BRITAIN and IRELAND (including those on Private Branch Railways and Tramways, and in Washing and Coking Coal), during the Year 1899.

PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT.												
	1	2	3	4	5	6		7	8	10	11	12	13
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire, and Kent.	Manchester. Ireland.	Liverpool.	Midland.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.
Explosions of Fire-damp or Coal Dust.	**31**	**27**	**8**	**5**	**3**	**1**	**—**	**2**	**5**	**2**	**10**	**2**	**28**
Falls of Ground. Falls of Side	74	31	37	45	48	26	—	34	109	30	32	43	71
Falls of Ground. Falls of Roof	82	67	86	107	151	42	1	53	187	46	55	88	131
Falls of Ground. Total	**156**	**98**	**123**	**152**	**199**	**68**	**1**	**87**	**296**	**76**	**87**	**131**	**208**
Shaft Accidents. Overwinding	—	—	—	—	1	—	—	—	1	—	1	1	—
Shaft Accidents. Ropes or Chains breaking ...	—	1	—	—	—	—	—	—	—	—	—	—	—
Shaft Accidents. Whilst ascending or descending by Machinery.	3	1	4	1	3	1	—	—	1	2	—	2	2
Shaft Accidents. Falling into Shaft from Surface	—	—	—	—	—	—	—	—	—	—	—	—	—
Shaft Accidents. Things falling from Surface ...	—	3	1	—	—	—	—	—	—	—	1	—	3
Shaft Accidents. Falling from part way down ...	1	3	—	3	1	—	—	—	2	—	2	—	—
Shaft Accidents. Things falling from part way down.	—	—	—	—	2	1	—	1	1	—	1	—	1
Shaft Accidents. Miscellaneous	9	—	6	1	4	1	—	2	9	2	4	1	8
Shaft Accidents. Total	**13**	**8**	**11**	**5**	**11**	**3**	**—**	**3**	**14**	**4**	**9**	**4**	**14**
Miscellaneous Underground. By Explosives	32	22	25	43	10	2	—	6	16	8	9	6	16
Miscellaneous Underground. Suffocation by Natural Gases ...	1	—	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous Underground. By Underground Fires	—	—	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous Underground. Irruptions of Water	—	—	—	—	—	—	—	—	—	—	—	—	—
Miscellaneous Underground. Haulage :—													
Miscellaneous Underground. On Inclined and Engine Planes	35	16	30	22	37	25	—	23	36	11	5	4	48
Miscellaneous Underground. Ropes or Chains breaking ...	7	3	—	—	1	2	—	3	1	2	—	2	3
Miscellaneous Underground. By Trams and Tubs	28	21	40	71	79	13	—	22	129	22	38	36	98
Miscellaneous Underground. By Machinery	2	4	6	—	6	4	—	—	4	1	3	6	2
Miscellaneous Underground. Sundries	11	6	30	37	35	7	—	9	184	9	27	9	30
Miscellaneous Underground. Total	**116**	**72**	**131**	**173**	**168**	**53**	**—**	**63**	**370**	**53**	**82**	**63**	**197**
Total Underground	**316**	**205**	**273**	**335**	**381**	**125**	**1**	**155**	**685**	**135**	**188**	**200**	**447**
On Surface. By Machinery	11	11	4	12	16	2	—	2	19	1	3	2	8
On Surface. Boiler Explosions	—	—	4	1	—	—	—	—	—	—	—	—	1
On Surface. Railways, Sidings, or Tramways	16	10	23	19	23	6	—	6	13	1	7	8	28
On Surface. Miscellaneous	21	7	12	22	41	2	—	8	38	11	9	7	23
On Surface. Total on Surface ...	**48**	**28**	**43**	**54**	**80**	**10**	**—**	**16**	**70**	**13**	**19**	**17**	**60**
Gross Total in 1899	**364**	**233**	**316**	**389**	**461**	**135**	**1**	**171**	**755**	**148**	**207**	**217**	**507**
Total in preceding Year	331	246	295	495	468	132	2	179	798	146	157	178	441

* No. 9 is a District for the purposes of the Metalliferous Mines Act and the Quarries Act only.

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PERSONS INJURED.

COAL MINES REGULATION ACT.

ABLE No. 18.—**Number of Persons Injured** both by the aforesaid NON-FATAL ACCIDENTS and by ACCIDENTS which proved fatal to others, in and about the MINES of GREAT BRITAIN and IRELAND (including those on Private Branch Railways and Tramways, and in Washing and Coking Coal), during the Year 1899.

PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT.													Total.
	1	2	3	4	5	6		7	8	10	11	12	13	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire, and Kent.	Manchester. Ireland.	Liverpool.	Midland.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Explosions of Fire-damp or Coal Dust.	**44**	**45**	**15**	**14**	**9**	**1**	**—**	**4**	**4**	**3**	**16**	**2**	**37**	**194**
Falls of Side	75	32	39	45	50	26	—	35	109	30	32	44	77	594
Falls of Roof	84	70	91	111	156	42	1	58	194	47	57	88	138	1,137
Total	**159**	**102**	**130**	**156**	**206**	**68**	**1**	**93**	**303**	**77**	**89**	**132**	**215**	**1,731**
Overwinding	—	—	—	—	3	—	—	—	27	—	3	5	—	38
Ropes or Chains breaking ...	—	1	—	—	—	—	—	—	—	—	—	—	—	1
Whilst ascending or descending by Machinery.	3	2	4	1	3	1	—	—	1	2	—	4	2	23
Falling into Shaft from Surface	—	—	1	—	—	—	—	—	—	—	—	—	—	1
Things falling from Surface ...	—	3	1	—	—	—	—	—	—	—	1	—	3	8
Falling from part way down ...	1	3	—	3	2	—	—	—	2	—	2	—	—	13
Things falling from part way down.	—	—	—	1	2	2	—	1	1	—	1	—	1	9
Miscellaneous	10	—	7	1	4	1	—	2	10	2	4	1	8	50
Total	**14**	**9**	**13**	**6**	**14**	**4**	**—**	**3**	**41**	**4**	**11**	**10**	**14**	**143**
By Explosives	35	23	27	44	12	4	—	6	21	9	11	8	21	221
Suffocation by Natural Gases ...	2	—	—	—	—	—	—	—	—	—	—	—	—	2
By Underground Fires	—	—	—	2	—	—	—	—	—	—	—	—	—	2
Irruptions of Water	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Haulage :—														
On Inclined and Engine Planes	39	16	31	23	37	26	—	23	36	11	6	4	48	300
Ropes or Chains breaking ...	7	3	—	—	2	2	—	3	1	3	—	2	3	26
By Trams and Tubs	28	21	40	71	79	13	—	22	129	22	38	36	98	597
By Machinery	2	4	6	—	6	4	—	—	4	1	3	6	2	38
Sundries	11	6	30	37	35	7	—	9	184	9	27	9	31	395
Total	**124**	**73**	**134**	**177**	**171**	**56**	**—**	**63**	**375**	**55**	**85**	**65**	**203**	**1,581**
Total Underground	**341**	**229**	**292**	**353**	**400**	**129**	**1**	**163**	**723**	**139**	**201**	**209**	**469**	**3,649**
By Machinery	11	15	4	12	16	2	—	2	19	1	3	2	8	95
Boiler Explosions	—	—	4	1	—	—	—	—	—	—	—	—	1	6
Railways, Sidings, or Tramways	16	10	23	19	23	6	—	6	13	1	7	8	28	160
Miscellaneous	22	8	12	22	42	2	—	8	39	11	9	7	23	205
Total on Surface ...	**49**	**33**	**43**	**54**	**81**	**10**	**—**	**16**	**71**	**13**	**19**	**17**	**60**	**466**
oss Total in 1899	**390**	**262**	**335**	**407**	**481**	**139**	**1**	**179**	**794**	**152**	**220**	**226**	**529**	**4,115**
al in preceding Year	353	294	307	504	482	143	2	196	811	151	170	186	474	4,073

* No. 9 is a District for the purposes of the Metalliferous Mines Act and the Quarries Act only.

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SEPARATE NON-FATAL ACCIDENTS.

METALLIFEROUS MINES REGULATION ACT.

TABLE No. 19.—**Separate Non-Fatal Accidents** in and about the MINES of GREAT BRITAIN and IRELAND, together with the ISLE OF MAN, during the Year 1899.

PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT.													Total.
	1	2	3	4	5	6		7	8	9	10	11	12	13	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire.	Manchester. Ireland.	Liverpool.	Midland.	North Wales, &c.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Explosions of Fire-damp ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Falls of Ground	—	—	**14**	**3**	**3**	**3**	**2**	—	**3**	**22**	—	—	**10**	—	**60**
Shaft Accidents.															
Overwinding	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ropes or Chains breaking	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Whilst ascending or descending by Machinery.	—	—	—	—	1	—	—	—	—	—	—	—	2	—	3
Falling into Shaft from Surface ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Things falling from Surface ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Falling from part way down ...	—	—	2	—	—	—	—	—	1	4	—	—	1	—	8
Things falling from part way down	—	—	—	—	1	—	—	—	—	1	—	—	—	—	2
Miscellaneous...	—	—	1	—	—	—	—	—	—	1	1	—	2	—	5
Total	—	—	**3**	—	**2**	—	—	—	**1**	**6**	**1**	—	**6**	—	**19**
Miscellaneous Underground.															
By Explosives...	1	—	6	—	—	—	1	—	2	7	—	—	1	—	18
Suffocation by Natural Gases ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By Underground Fires	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
Irruptions of Water	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Haulage :—															
On Inclined and Engine Planes...	—	—	1	—	—	—	—	—	—	3	—	—	—	—	4
Ropes or Chains breaking ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
By Trams and Tubs	—	—	3	—	—	—	—	—	—	9	1	—	2	—	15
By Machinery	—	—	—	—	1	—	—	—	—	8	—	—	—	—	9
Sundries	1	—	12	2	1	2	—	—	1	52	2	—	9	—	82
Total	**2**	—	**22**	**2**	**2**	**2**	**2**	—	**3**	**79**	**3**	—	**13**	—	**130**
Total Underground ...	**2**	—	**39**	**5**	**7**	**5**	**4**	—	**7**	**107**	**4**	—	**29**	—	**209**
On Surface.															
By Machinery...	—	—	—	—	—	2	—	—	—	24	1	—	1	—	28
Boiler Explosions	—	—	2	—	—	1	—	—	—	—	—	—	—	—	3
Railways, Sidings, or Tramways ...	—	—	3	—	—	1	—	—	—	10	1	—	1	—	16
Miscellaneous...	1	—	8	2	4	3	—	—	—	63	1	—	3	—	85
Total on Surface ...	**1**	—	**13**	**2**	**4**	**7**	—	—	—	**97**	**3**	—	**5**	—	**132**
Gross Total in 1899	**3**	—	**52**	**7**	**11**	**12**	**4**	—	**7**	**204**	**7**	—	**34**	—	**341**
Total in preceding Year	2	3	53	10	4	18	2	—	6	180	7	4	34	—	323

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PERSONS INJURED.

METALLIFEROUS MINES REGULATION ACT.

TABLE NO. 20.—**Number of Persons Injured** both by the aforesaid NON-FATAL ACCIDENTS and by ACCIDENTS which proved FATAL to others, in and about the MINES of GREAT BRITAIN and IRELAND, together with the ISLE OF MAN, during the Year 1899.

PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT.													Total.
	1	2	3	4	5	6		7	8	9	10	11	12	13	
	East Scotland.	West Scotland.	Newcastle.	Durham.	Yorkshire and Lincolnshire.	Manchester. N. and E. Lancashire.	Manchester. Ireland.	Liverpool.	Midland.	North Wales, &c.	North Staffordshire.	South Staffordshire.	South Western.	South Wales.	
Explosions of Fire-damp ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Falls of Ground	—	—	**15**	**3**	**5**	**4**	**2**	—	**3**	**29**	—	—	**11**	—	**72**
Shaft Accidents.															
Overwinding	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Ropes or Chains breaking	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Whilst ascending or descending by Machinery.	—	—	—	—	1	—	—	—	—	—	—	—	2	—	3
Falling into Shaft from Surface ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Things falling from Surface ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
Falling from part way down ...	—	—	2	—	—	—	—	—	1	4	—	—	1	—	8
Things falling from part way down	—	—	—	—	1	—	—	—	—	1	—	—	—	—	2
Miscellaneous...	—	—	1	—	—	—	—	—	—	1	1	—	2	—	5
Total	—	—	**3**	—	**2**	—	—	—	**1**	**6**	**1**	—	**6**	—	**19**
Miscellaneous Underground.															
By Explosives	1	—	8	—	—	—	1	—	4	8	—	—	3	—	25
Suffocation by Natural Gases ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
By Underground Fires	—	—	—	—	—	—	2	—	—	—	—	—	—	—	2
Irruptions of Water...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Haulage :—															
On Inclined and Engine Planes	—	—	1	—	—	—	—	—	—	3	—	—	—	—	4
Ropes or Chains breaking ...	—	—	—	—	—	—	—	—	—	—	—	—	1	—	1
By Trams and Tubs	—	—	3	—	—	—	—	—	—	9	1	—	2	—	15
By Machinery	—	—	—	—	1	—	—	—	—	8	—	—	—	—	9
Sundries	1	—	12	2	1	2	—	—	1	52	2	—	9	—	82
Total	**2**	—	**24**	**2**	**2**	**2**	**3**	—	**5**	**80**	**3**	—	**15**	—	**138**
Total Underground ...	**2**	—	**42**	**5**	**9**	**6**	**5**	—	**9**	**115**	**4**	—	**32**	—	**229**
On Surface.															
By Machinery	—	—	—	—	—	2	—	—	—	24	1	—	1	—	28
Boiler Explosions	—	—	2	—	—	2	—	—	—	—	—	—	—	—	4
Railways, Sidings, or Tramways ...	—	—	3	—	—	1	—	—	—	10	1	—	1	—	16
Miscellaneous...	1	—	8	2	4	3	—	—	—	63	1	—	3	—	85
Total on Surface ...	**1**	—	**13**	**2**	**4**	**8**	—	—	—	**97**	**3**	—	**5**	—	**133**
Gross Total in 1899	**3**	—	**55**	**7**	**13**	**14**	**5**	—	**9**	**212**	**7**	—	**37**	—	**362**
Total in preceding Year	2	3	55	11	4	21	2	—	6	183	7	4	37	—	335

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SEPARATE NON-FATAL ACCIDENTS.

QUARRIES ACT AND FACTORY AND WORKSHOP ACTS.

TABLE No. 21.—**Separate Non-Fatal Accidents** in and about the QUARRIES (more than 20 feet deep) of GREAT BRITAIN and IRELAND, together with the ISLE OF MAN, during the Year 1899.

	Place or Cause of Accident.	Inspection District. 1 East Scotland.	2 West Scotland.	3 Newcastle.	4 Durham.	5 Yorkshire and Lincolnshire.	6 Manchester. N. and E. Lancashire.	6 Manchester. Ireland.	7 Liverpool.	8 Midland.	9 North Wales, &c.	10 North Staffordshire.	11 South Staffordshire.	12 South Western.	13 South Wales.	Total
Inside the Quarries (*i.e.*, inside the actual Pits, Holes, or Excavations).	Falls of Ground. From beyond the Person's own working place.	6	—	3	11	18	2	2	2	11	14	†	4	†	5	†
	Falls of Ground. From the Person's own working place.	3	3	3	7	11	6	—	—	29	39	†	8	†	1	†
	Falls of Ground. **Total**	**9**	**3**	**6**	**18**	**29**	**8**	**2**	**2**	**40**	**53**	**4**	**12**	**19**	**6**	111
	By Blasting. While charging or tamping...	2	—	4	1	1	1	—	—	2	9	—	—	3	1	24
	By Blasting. From Stones projected by Shots.	1	—	3	11	—	1	1	—	2	2	—	—	3	1	25
	By Blasting. From Miss-fires	—	1	—	—	2	—	—	—	1	2	—	—	6	—	12
	By Blasting. Miscellaneous	4	1	3	—	1	3	—	1	3	4	3	1	1	—	25
	By Blasting. **Total**	**7**	**2**	**10**	**12**	**4**	**5**	**1**	**1**	**8**	**17**	**3**	**1**	**13**	**2**	86
	During Descent or Ascent. Falling from Paths, Steps, or Ladders.	1	—	—	—	1	—	—	1	2	1	—	—	2	—	8
	During Descent or Ascent. Whilst ascending or descending by machinery.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	During Descent or Ascent. Miscellaneous	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	During Descent or Ascent. **Total**	**1**	**1**	—	—	**1**	—	—	**1**	**2**	**1**	—	—	**2**	—	9
	Miscellaneous. Ropes or Chains breaking ...	2	—	—	—	1	—	1	—	1	—	—	—	1	—	6
	Miscellaneous. Machinery	3	2	2	2	—	6	—	—	3	11	2	2	6	—	39
	Miscellaneous. Boilers bursting	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Miscellaneous. Inclined and Engine Planes	—	—	2	—	—	—	—	—	13	8	1	—	—	—	24
	Miscellaneous. Railways, Sidings, or Tramways.	1	—	4	6	4	2	—	—	17	29	2	3	10	—	78
	Miscellaneous. Falling from Ledges	1	—	6	2	9	5	—	1	15	10	—	3	3	2	57
	Miscellaneous. Sundries	11	7	11	24	23	18	—	1	97	126	10	6	38	2	374
	Miscellaneous. **Total**	**18**	**9**	**25**	**34**	**37**	**31**	**1**	**2**	**146**	**184**	**15**	**14**	**58**	**4**	578
	Total inside Quarries	**35**	**15**	**41**	**64**	**71**	**44**	**4**	**6**	**196**	**255**	**22**	**27**	**92**	**12**	694
Outside the Quarries, at Factories or Workshops connected with Quarries situated within one mile of them, and belonging to the same Owner.	Machinery	5	4	—	—	30	6	—	1	14	7	—	—	3	1	71
	Hot Liquid or Molten Metal or other Substance in Vat or Pan.	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	Boiler Explosions	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
	Escape of Gas, Steam, or Metal	—	—	—	—	1	—	—	—	4	—	—	—	—	—	5
	Inclined and Engine Planes	—	1	—	—	1	—	—	—	1	1	—	—	—	—	4
	Tramways, Sidings, or Railways.	2	1	3	2	9	2	—	1	3	16	—	—	1	3	43
	Miscellaneous	5	4	2	—	30	6	2	2	13	41	—	—	5	7	117
	Total outside Quarries	**12**	**11**	**5**	**2**	**71**	**14**	**3**	**4**	**35**	**65**	—	—	**9**	**11**	242
Gross Total in 1899		**47**	**26**	**46**	**66**	**142**	**58**	**7**	**10**	**231**	**320**	**22**	**27**	**101**	**23**	1,136
Total in preceding Year		43	30	40	45	140	79	10	11	245	507	48	74	116	11	1,399

† Falls not separated into two classes.

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PERSONS INJURED.

QUARRIES ACT AND FACTORY AND WORKSHOP ACTS.

TABLE NO. 22.—**Number of Persons Injured** both by the aforesaid NON-FATAL ACCIDENTS and by ACCIDENTS which proved FATAL to others in and about the QUARRIES (more than 20 feet deep) of GREAT BRITAIN and IRELAND, together with the ISLE OF MAN, during the Year 1899.

	PLACE OR CAUSE OF ACCIDENT.	INSPECTION DISTRICT. 1 East Scotland.	2 West Scotland.	3 Newcastle.	4 Durham.	5 Yorkshire and Lincolnshire.	6 Manchester. N. and E. Lancashire.	6 Manchester. Ireland.	7 Liverpool.	8 Midland.	9 North Wales, &c.	10 North Staffordshire.	11 South Staffordshire.	12 South Western.	13 South Wales.	Total.
Inside the Quarries (*i.e.*, inside the actual Pits, Holes, or Excavations).	Falls of Ground. From beyond the Person's own working place.	7	—	3	11	18	2	2	2	12	15	†	4	†	5	†
	Falls of Ground. From the Person's own working place.	3	3	3	7	11	6	—	—	32	39	†	8	†	1	†
	Falls of Ground. Total	**10**	**3**	**6**	**18**	**29**	**8**	**2**	**2**	**44**	**54**	**5**	**12**	**19**	**6**	**218**
	By Blasting. While charging or tamping...	2	—	5	1	2	2	—	—	4	12	—	—	5	1	34
	By Blasting. From Stones projected by Shots.	1	—	3	11	—	1	1	—	2	2	—	—	3	1	25
	By Blasting. From Miss-fires	—	2	—	—	2	—	—	—	1	4	—	—	9	—	18
	By Blasting. Miscellaneous	6	1	3	—	1	4	—	1	3	5	3	1	1	—	29
	By Blasting. Total	**9**	**3**	**11**	**12**	**5**	**7**	**1**	**1**	**10**	**23**	**3**	**1**	**18**	**2**	**106**
	During Descent or Ascent. Falling from Paths, Steps, or Ladders	1	—	—	—	1	—	—	1	2	1	—	—	2	—	8
	During Descent or Ascent. Whilst descending or ascending by machinery.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	During Descent or Ascent. Miscellaneous	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	During Descent or Ascent. Total	**1**	**1**	**—**	**—**	**1**	**—**	**—**	**1**	**2**	**1**	**—**	**—**	**2**	**—**	**9**
	Miscellaneous. Ropes or Chains breaking ...	2	—	—	—	1	—	1	—	1	—	—	—	1	—	6
	Miscellaneous. Machinery	3	2	2	2	—	6	—	—	3	11	2	2	7	—	40
	Miscellaneous. Boiler Explosions	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Miscellaneous. Inclined and Engine Planes...	—	—	2	—	—	—	—	—	13	8	1	—	—	—	24
	Miscellaneous. Railways, Sidings, or Tramways.	1	—	4	6	4	2	—	—	17	29	2	3	10	—	78
	Miscellaneous. Falling from Ledges	1	—	6	2	9	5	—	1	15	10	—	3	3	2	57
	Miscellaneous. Sundries	12	7	11	24	24	18	—	1	99	128	10	6	38	2	380
	Miscellaneous. Total	**19**	**9**	**25**	**34**	**38**	**31**	**1**	**2**	**148**	**186**	**15**	**14**	**59**	**4**	**585**
	Total inside Quarries ...	**39**	**16**	**42**	**64**	**73**	**46**	**4**	**6**	**204**	**264**	**23**	**27**	**98**	**12**	**918**
Outside the Quarries, at Factories or Workshops, connected with Quarries situated within one mile of them and belonging to the same Owner.	Machinery	6	4	—	—	30	6	—	1	14	7	—	—	3	1	72
	Hot Liquid or Molten Metal or other Substance in Vat or Pan.	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1
	Boiler Explosions	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
	Escape of Gas, Steam, or Metal.	—	—	—	—	1	—	—	—	4	—	—	—	—	—	5
	Inclined and Engine Planes...	—	1	—	—	1	—	—	—	1	1	—	—	—	—	4
	Railways, Sidings, or Tramways.	2	1	3	2	9	2	—	1	3	16	—	—	1	3	43
	Miscellaneous	5	4	2	—	30	6	2	2	19	41	—	—	5	7	123
	Total outside Quarries	**13**	**11**	**5**	**2**	**71**	**14**	**3**	**4**	**41**	**65**	**—**	**—**	**9**	**11**	**249**
	Gross Total in 1899	**52**	**27**	**47**	**66**	**144**	**60**	**7**	**10**	**245**	**329**	**23**	**27**	**107**	**23**	**1,167**
	Total in preceding Year	45	30	44	46	144	79	15	11	247	520	49	75	117	12	1,434

† Falls not separated into two classes.

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ACCIDENT DEATH-RATES.

MINES AND QUARRIES.

TABLE No. 23. COAL MINES REGULATION ACT.

	Place or Cause of Accident.	Inspection District. 1 East Scotland.	2 West Scotland.	3 Newcastle.	4 Durham.	5 Yorkshire and Lincolnshire.	6 Manchester.	6 Ireland.	7 Liverpool.	8 Midland.	9 North Wales, &c.	10 North Staffordshire.	11 South Staffordshire.	12 South Western.	13 South Wales.	Average. 1899.	1898.
Per 1,000 persons employed.	Below ground :—																
	By explosions of fire-damp or coal-dust.	·16	·26	·03	·11	·03	—	—	·05	—	—	—	·25	—	·24	·09	·06
	,, falls of ground	·81	·64	·65	·91	·48	·90	2·73	·82	·62	—	·79	·84	·63	·98	·75	·76
	Shaft accidents	·20	·14	·12	·08	·05	·06	—	·16	·12	—	·10	—	·13	·18	·12	·11
	Miscellaneous	·50	·41	·29	·51	·28	·61	—	·37	·18	—	·55	·55	·33	·63	·41	·43
	From all causes below ground ...	1·67	1·45	1·09	1·61	·84	1·57	2·73	1·40	·92	—	1·44	1·64	1·09	2·03	1·37	1·37
	From all causes above ground ...	1·38	1·28	1·05	·55	·89	·51	—	·67	·57	—	·63	·28	·80	·85	·79	·81
	Above and below ground ...	**1·62**	**1·42**	**1·08**	**1·35**	**·85**	**1·36**	**2·01**	**1·26**	**·85**	—	**1·25**	**1·28**	**1·03**	**1·85**	**1·26**	**1·28**
From all accidents per 1,000,000 tons of mineral raised.		4·23	4·12	3·48	3·69	2·94	4·73	—	4·09	2·59	—	4·15	3·57	3·54	6·26	3·93	4·12

TABLE No. 24. METALLIFEROUS MINES REGULATION ACT.

Per 1,000 persons employed.	Below ground :—																
	By explosions of fire-damp ...	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	,, falls of ground	2·24	—	1·43	1·20	—	—	2·22	—	—	·57	—	—	·79	—	·92	·99
	Shaft accidents	—	—	·80	—	2·14	—	—	—	—	·57	4·31	—	·59	—	·68	·10
	Miscellaneous	—	—	1·12	—	—	—	8·87	—	1·89	·57	—	—	·40	—	·83	·25
	From all causes below ground ...	2·24	—	3·35	1·20	2·14	—	11·09	—	1·89	1·71	4·31	—	1·78	—	2·43	1·34
	From all causes above ground ...	—	—	·78	—	1·15	—	—	—	—	·38	—	—	·29	—	·41	·43
	Above and below ground ...	**1·56**	—	**2·60**	**·73**	**1·49**	—	**7·85**	—	**1·23**	**1·04**	**2·52**	—	**1·17**	—	**1·59**	**·96**

TABLE No. 25. QUARRIES ACT.

Per 1,000 persons employed.	Inside the quarries :—																
	By falls of ground	·99	·84	·64	·32	1·13	·35	1·39	—	·66	·60	·92	·78	·50	—	·69	·70
	,, blasting	·20	·28	—	·32	—	—	—	—	·09	·17	—	—	·21	—	·12	·16
	During descent and ascent ...	·20	—	—	—	—	·35	—	—	—	—	—	—	—	—	·03	·03
	Miscellaneous	·60	·28	·64	·96	1·80	·70	1·04	—	·28	·78	·46	·78	·50	1·06	·69	·70
	From all causes inside	1·99	1·40	1·28	1·60	2·93	1·40	2·43	—	1·03	1·55	1·38	1·56	1·21	1·06	1·53	1·59
	From all causes outside	·30	·86	1·59	1·65	·42	1·72	·61	—	·54	·27	—	—	·72	—	·56	·47
	Inside and outside	**1·31**	**1·18**	**1·37**	**1·61**	**1·64**	**1·52**	**1·77**	—	**·91**	**1·05**	**·88**	**1·22**	**1·06**	**·81**	**1·19**	**1·09**

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COMPARATIVE TABLES.

1873 to 1899.

Tables of Persons Employed, Output, and Deaths from Accidents in Mines under the Coal Mines Regulation Acts and the Metalliferous Mines Regulation Acts, from 1873 to 1899.

Also a Table (No. 28) showing the Output of the Principal Minerals from all Mines, Quarries, and other Workings from 1873 to 1899.

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COMPARATIVE TABLES.

PERSONS EMPLOYED.

TABLE No. 26.—**Persons employed** in and about the MINES classed under the **Coal and Metalliferous Mines Regulation Acts**, from 1873 to 1899.

YEAR.	COAL MINES ACT.				METALLIFEROUS MINES ACT.				Total under both Acts.
	Under-ground.	Above-ground.		Total.	Under-ground.	Above-ground.		Total.	
	Males.	Males.	Females.		Males.	Males.	Females.		
1873	407,808	100,375	5,966	514,149	37,378	20,271	5,034	62,683	576,832
1874	428,611	103,319	6,899	538,829	34,036	18,189	4,136	56,361	595,190
1875	427,017	102,324	6,504	535,845	34,905	19,365	3,803	58,073	593,918
1876	409,229	99,248	6,055	514,532	34,109	19,815	3,573	57,497	572,020
1877	395,025	93,988	5,378	494,391	34,095	19,964	3,336	57,395	551,786
1878	382,979	87,394	4,956	475,329	30,624	18,016	2,818	51,458	526,787
1879	385,179	86,789	4,842	476,810	28,265	16,602	2,193	47,060	523,870
1880	391,381	88,912	4,640	484,933	32,045	18,600	2,263	52,908	537,841
1881	399,387	91,375	4,715	495,477	33,291	19,405	2,246	54,942	550,419
1882	406,192	93,143	4,652	503,987	33,814	19,290	2,402	55,506	559,493
Average for 10 years	403,281	94,687	5,460	503,428	33,256	18,952	3,180	55,388	558,816
1883	416,696	93,758	4,479	514,933	30,492	17,773	1,970	50,235	565,168
1884	422,233	93,685	4,458	520,376	26,614	15,718	1,788	44,120	564,496
1885	424,191	92,138	4,303	520,632	24,902	14,469	1,673	41,044	561,676
1886	423,862	91,977	4,131	519,970	24,795	14,890	1,437	41,122	561,092
1887	428,540	93,554	4,183	526,277	25,113	15,094	1,542	41,749	568,026
1888	438,902	106,024	4,258	549,184	26,104	15,946	1,422	43,472	592,656
1889	463,600	113,868	4,341	581,809	25,579	16,405	1,436	43,420	625,229
1890	506,812	121,071	4,497	632,380	24,858	15,803	1,393	42,054	674,434
1891	536,091	127,143	4,749	667,983	23,098	14,967	1,363	39,428	707,411
1892	549,312	129,459	4,871	683,642	22,528	14,410	1,228	38,166	721,808
Average for 10 years	461,024	106,268	4,427	571,719	25,408	15,548	1,525	42,481	614,200
1893	549,738	128,545	4,725	683,008	21,240	13,464	1,035	35,739	718,747
1894	569,678	130,979	4,583	705,240	20,011	12,754	1,092	33,857	739,097
1895	564,638	130,809	4,837	700,284	19,660	12,914	799	33,373	733,657
1896	557,026	131,141	4,517	692,684	19,299	13,223	597	33,119	725,803
1897	558,305	132,457	4,451	695,213	19,921	12,956	623	33,500	728,713
1898	567,124	135,153	4,617	706,894	20,173	13,549	509	34,231	741,125
1899	583,009	141,298	4,702	729,009	20,618	14,080	459	35,157	764,166

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COMPARATIVE TABLES.

OUTPUT OF MINERAL.

TABLE No. 27.—**Output of Mineral** from MINES under the **Coal and Metalliferous Mines Regulation Acts**, from 1873 to 1899.

YEAR.	Coal.	Fireclay.	Ironstone.*	Oil Shale.	Other Minerals.	Total under the Coal Mines Act.	Total under the Metalliferous Mines Act.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1873	128,680,131	1,742,193	12,094,827	524,095	—	143,041,246	3,795,520
1874	126,590,108	2,067,791	11,693,186	362,747	—	140,713,832	3,659,701
1875	133,306,485	1,932,294	12,018,594	437,774	5,166	147,700,313	4,104,276
1876	134,125,166	2,071,983	12,159,580	603,538	29,118	148,989,385	4,120,700
1877	134,179,968	1,813,541	12,014,356	801,701	36,694	148,846,260	4,455,416
1878	132,612,063	1,625,586	10,747,227	788,704	24,558	145,798,138	4,068,485
1879	133,720,393	1,455,003	9,387,766	783,748	19,459	145,366,369	3,894,232
1880	146,969,409	1,938,539	11,664,726	837,805	56,314	161,465,793	4,595,202
1881	154,184,300	1,896,907	11,858,766	958,255	61,703	168,959,931	4,911,617
1882	156,499,977	2,209,036	11,505,447	1,030,915	88,657	171,334,032	5,215,962
Average for 10 years	138,086,800	1,875,287	11,514,447	712,928	40,209†	152,221,629	4,282,111
1883	163,737,327	2,189,452	11,495,401	1,167,943	173,267	178,763,390	4,522,860
1884	160,757,779	2,053,927	10,412,443	1,518,871	129,739	174,872,759	4,099,461
1885	159,351,418	1,878,514	10,108,612	1,770,413	115,003	173,223,960	3,992,867
1886	157,518,482	1,782,054	8,862,648	1,728,503	115,272	170,006,959	4,004,974
1887	162,119,812	1,810,490	7,569,918	1,411,378	138,197	173,049,795	4,222,411
1888	169,935,219	1,879,273	8,635,032	2,076,469	134,170	182,660,163	4,269,886
1889	176,916,724	2,192,346	8,270,542	2,014,860	239,184	189,633,656	3,361,088
1890	181,614,288	2,405,727	8,117,476	2,212,250	256,146	194,605,887	4,151,311
1891	185,479,126	2,394,065	7,229,150	2,361,119	230,132	197,693,592	4,038,440
1892	181,786,871	2,212,333	5,644,486	2,089,937	221,281	191,954,908	3,750,026
Average for 10 years	169,921,705	2,079,818	8,634,571	1,835,174	175,239	182,646,507	4,041,332
1893	164,325,795	2,186,243	6,560,189	1,956,520	208,110	175,236,857	3,770,991
1894	188,277,525	2,164,863	6,814,546	1,986,385	207,699	199,451,018	3,671,228
1895	189,652,562	2,314,983	7,231,835	2,246,865	292,106	201,738,351	3,660,192
1896	195,351,951	2,526,044	7,856,586	2,419,525	349,762	208,503,868	3,873,697
1897	202,119,196	2,682,472	7,793,168	2,223,745	326,444	215,145,025	3,783,916
1898	202,042,243	2,783,219	7,901,046	2,137,993	297,453	215,161,954	3,812,728
1899	220,085,368	2,931,091	7,775,868	2,210,824	315,933	233,319,084	3,672,841

* For the total quantity of ironstone and iron ore raised *see* "Iron ore," page 39. † Average for eight years only.

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COMPARATIVE

OUTPUT OF

TABLE No. 28.—Output of the principal MINERALS from all MINES,

YEAR.	Alum Clay (Bauxite.)	Alum Shale.	Arsenic.	Arsenical Pyrites.	Barytes.	* Chalk.	* Chert and Flint.	* Clay and Shale.	Coal.	Copper Ore	Copper Precipitate.	Fluor Spar.	Gold Ore (Auriferous Quartz).	* Gravel and Sand.	Gypsum.	* Igneous Rocks, other than Granite.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1873 ..	No returns	No returns	5,449	No returns	10,270	No returns	No returns	1,785,000	128,680,131	80,188	60	No returns	—	No returns	66,124	No returns
1874 ..	„	„	6,268	„	14,374	„	„	2,438,912	126,590,108	78,521	175	634	—	„	61,113	„
1875 ..	„	„	5,061	12,948	15,549	„	„	3,008,444	133,506,485	71,528	211	359	32	„	65,068	„
1876 ..	„	4,518	4,228	12,949	23,562	„	„	3,971,123	134,125,166	79,252	770	337	—	„	61,741	„
1877 ..	2,763	19,735	4,809	5,341	21,056	„	„	2,961,155	134,179,968	73,141	628	220	—	„	73,908	„
1878 ..	3,426	6,733	4,991	3,638	22,436	„	„	2,711,486	132,612,063	56,094	582	392	—	„	74,908	„
1879 ..	3,657	4,097	5,492	2,596	19,350	„	„	2,878,489	133,720,393	51,032	362	1,265	⅛	„	62,443	„
1880 ..	3,470	6,895	5,738	5,188	18,477	„	„	3,062,544	146,969,409	52,118	330	458	⅛	„	75,452	„
1881 ..	7,732	7,661	6,156	14,321	21,314	„	„	2,401,421	154,184,300	52,556	587	373	⅛	„	79,489	„
1882 ..	8,389	8,442	7,469	12,564	23,308	„	„	2,856,276	156,499,977	52,810	427	145	—	„	101,872	„
Average for 10 years.	—	—	5,566	—	18,970	—	—	2,807,285	138,086,800	64,724	408	—	—	—	72,213	—
1883 ..	13,478	8,288	7,822	1,300	21,396	No returns	No returns	2,953,353	163,737,327	46,288	531	90	⅛	No returns	99,551	No returns
1884 ..	8,560	1,960	7,905	1,762	20,062	„	„	2,695,710	160,757,779	41,728	421	581	—	„	109,922	„
1885 ..	9,090	2,331	8,129	1,911	26,153	„	„	2,531,198	159,351,418	36,241	158	423	—	„	112,078	„
1886 ..	8,262	2,992	5,027	4,918	25,142	„	„	2,390,440	157,518,482	18,205	412	279	—	„	118,848	„
1887 ..	4,169	2,586	4,618	4,364	24,813	„	„	2,413,693	162,119,812	9,079	280	283	17/16	„	120,783	„
1888 ..	9,666	1,984	4,624	5,325	25,191	„	„	2,562,792	169,985,219	15,132	418	140	3,844	„	130,082	„
1889 ..	9,150	4,188	4,758	7,688	24,849	„	„	3,036,253	176,916,724	9,029	281	297	6,266	„	132,357	„
1890 ..	11,527	6,420	7,276	5,114	25,353	„	„	3,308,214	181,614,268	12,136	345	268	575	„	140,293	„
1891 ..	10,763	5,474	6,048	5,095	26,876	„	„	3,222,035	185,479,126	8,836	322	141	14,117	„	151,708	„
1892 ..	7,322	2,922	5,114	4,497	24,247	„	„	3,103,852	181,786,871	5,995	270	171	9,990	„	147,540	„
Average for 10 years.	9,196	3,914	6,112	4,197	24,408	—	—	2,811,754	169,921,705	20,267	342	267	—	—	126,316	—
1893 ..	8,740	2,115	5,976	3,036	22,343	No returns	No returns	3,065,208	164,325,795	5,346	230	215	4,489	No returns	143,486	No returns
1894 ..	7,970	3,972	4,801	3,288	20,856	„	„	3,263,768	188,277,525	5,752	241	126	6,603	„	153,450	„
1895 ..	10,408	2,063	4,798	2,951	21,170	2,924,235	94,787	9,796,086*	189,661,362	7,531	260	36	13,266	1,014,477	177,892	3,396,116
1896 ..	7,249	Nil	3,616	8,808	23,737	3,559,229	107,967	11,341,782	195,361,260	8,970	198	394	2,765	1,268,310	193,311	4,043,815
1897 ..	13,327	611	4,165	13,137	22,723	3,858,448	93,710	12,705,196	202,129,931	7,132	220	297	4,517	1,356,787	181,385	4,202,877
1898 ..	12,402	13,617	4,174	11,144	22,225	4,298,014	82,057	14,738,474	202,054,516	9,001	130	56	703	1,625 690	196,028	4,478,308
1899 ..	8,009	5,820	3,829	13,519	24,864	4,678,132	68,834	15,064,857	220,094,781	8,144	175	783	3,047	1,771,276	212,563	4,709,925

* Complete returns from all quarries under the Quarries Act, 1894, are only available for 1895

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TABLES.

MINERAL.

from QUARRIES*, and from certain other WORKINGS, from 1873 to 1899.

Iron Ore.	Iron Pyrites.	Lead Ore.	* Lime-stone.	Man-ganese Ore.	Nickel and Cobalt Ore.	Ochre and Umber.	Oil Shale.	Phos-phate of Lime.	Salt.	Sand-stone.	* Slate.	Sul-phate of Strontia.	Tin Ore.	Ura-nium Ore.	Wol-fram.	Zinc Ore.	YEAR.
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	
15,577,499	58,924	73,500	No returns	8,671	⅛	6,368	524,095	No returns	1,785,000	No returns	No returns	No returns	14,885	—	47	15,969	1873.
14,944,936	56,208	76,202	„	5,778	—	7,122	362,747	149,654	2,306,567	„	151,989	„	14,039	—	33	16,830	1874.
15,831,080	48,035	77,746	„	3,205	—	5,316	437,774	250,122	2,316,644	„	153,282	„	13,095	—	46	23,978	1875.
16,841,594	48,810	79,096	„	2,797	1/16	3,805	603,538	258,150	2,273,256	„	156,887	„	13,888	—	23	23,613	1876.
16,622,802	43,948	80,850	„	3,039	27	5,074	801,701	69,006	2,735,000	„	172,130	„	14,142	⅛	15	24,406	1877.
15,726,370	29,868	77,350	„	1,586	99	4,415	788,704	54,000	2,682,930	„	169,041	„	15,045	1/16	10	25,438	1878.
14,378,735	20,276	66,877	„	810	117	3,974	783,748	34,000	2,558,368	„	142,862	„	14,665	⅛	13	22,200	1879.
13,028,060	31,708	72,245	„	2,839	49	6,126	837,805	30,500	2,645,000	„	152,691	„	13,738	—	1	27,548	1880.
17,446,065	43,617	64,702	„	2,884	64	7,966	958,255	31,500	2,296,220	„	162,341	„	12,896	—	54	35,527	1881.
18,031,957	25,403	65,001	„	1,548	38	8,873	1,930,915	49,550	2,135,499	„	504,780	„	14,045	—	58	32,539	1882.
16,338,805	40,880	73,357	—	3,316	—	5,904	712,928	—	2,373,648	—	—	—	14,114	—	30	24,805	Average for 10 years.
17,383,046	27,672	56,437	No returns	1,287	49	17,166	1,187,943	49,580	2,325,720	No returns	498,062	No returns	14,469	—	111	29,728	1883.
16,137,887	29,104	54,485	„	909	66	9,191	1,518,871	51,866	2,332,704	„	485,864	11,422	15,117	—	64	25,563	1884.
15,417,982	29,880	51,302	„	1,688	109	13,328	1,770,413	30,000	2,207,683	„	468,954	9,800	14,376	—	374	24,668	1885
14,110,013	27,829	53,420	„	12,763	100	12,392	1,728,503	20,000	2,142,220	„	456,208	13,602	14,232	—	140	23,156	1886.
13,098,041	22,079	51,563	„	13,777	154	8,293	1,411,378	9,894	2,193,951	„	464,334	15,169	14,189	—	54	25,445	1887
14,590,713	23,507	51,259	„	4,342	152	7,573	2,076,469	22,500	2,305,569	„	471,788	7,064	14,370	—	60	26,408	1888.
14,546,105	17,719	48,465	„	8,852	155	10,494	2,014,860	20,000	1,946,496	„	458,436	5,976	13,809	—	⅛	23,202	1889.
13,780,767	16,018	45,651	„	12,444	84	10,068	2,212,250	18,000	2,146,849	„	434,352	10,276	14,911	22	104	22,041	1890
12,777,689	15,463	43,859	„	9,476	Nil	13,602	2,361,119	10,000	2,043,571	„	415,029	8,061	14,488	31	133	22,216	1891.
11,312,675	13,987	40,024	„	6,078	„	12,131	2,069,937	12,200	1,956,524	„	418,241	5,066	14,329	37	125	26,880	1892.
14,315,492	22,322	49,651	—	7,162	87	12,324	1,835,174	24,404	2,160,129	—	457,107	—	14,429	—	117	24,931	Average for 10 years.
11,203,676	15,937	40,808	No returns	1,336	Nil	10,534	1,956,520	3,300	1,924,029	No returns	438,993	5,812	13,689	25	22	23,754	1893.
12,367,308	15,523	40,599	„	1,809	„	8,516	1,986,385	700	2,235,912	„	461,673	6,823	12,910	19	Nil	21,821	1894.
12,615,414	9,048	38,412	9,525,039	1,273	„	7,625	2,246,865	2,500	2,173,253	4,230,526	581,760	12,273	10,612	40	„	17,478	1895
13,700,764	10,017	41,069	11,011,350	1,080	„	9,891	2,419,525	3,000	2,022,357	4,507,745	586,933	18,042	7,663	35	43	19,319	1896.
13,787,878	10,583	35,338	11,003,524	599	300	14,422	2,223,745	2,000	1,903,493	4,964,109	609,194	14,987	7,120	30	125	19,278	1897
14,176,938	12,108	32,985	11,980,578	231	Nil	19,827	2,137,993	1,550	1,878,665	5,242,115	668,859	12,941	7,380	26	326	23,552	1898.
14,461,330	12,230	30,999	12,302,890	415	„	16,314	2,210,824	1,446	1,914,893	5,212,624	639,840	12,629	6,302	7	94	23,135	1899.

and subsequent years. Only the columns marked * are appreciably affected by this cause.

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COMPARATIVE TABLES.

DEATHS FROM ACCIDENTS.

TABLE No. 29.—**Number of Deaths** from different causes of ACCIDENTS in and about MINES classed under the **Coal Mines Regulation Acts**, from 1873 to 1899.

YEAR.	Number of Deaths from Accidents.						
	From different causes Underground.					Total on Surface.	Gross Total.
	Explosions of Fire-damp.	Falls of Ground.	Shaft Accidents.	Miscellaneous.	Total.		
1873	100	491	171	221	983	86	1,069
1874	166	413	154	214	947	109	1,056
1875†	288	458	172	227	1,145	99	1,244
1876	95	449	129	149	822	111	933
1877†	345	448	129	187	1,109	99	1,208
1878†	586	469	111	161	1,327	86	1,413
1879	184	426	120	172	902	71	973
1880†	499	462	91	178	1,230	88	1,318
1881	116	450	110	190	866	88	954
1882†	250	468	116	208	1,042	84	1,126
Average for 10 years	263	453	130	191	1,037	92	1,129
1883	134	469	97	246	946	108	1,054
1884	65	482	88	213	848	94	942
1885†	341	439	76	219	1,075	75	1,150
1886	129	461	86	188	864	89	953
1887	149	470	84	213	916	79	995
1888	49	471	75	209	804	102	906
1889	138	465	74	292	969	143	1,112
1890†	290	434	88	245	1,057	137	1,194
1891	51	476	119	236	882	123	1,005
1892†	123	435	91	255	904	112	1,016
Average for 10 years	147	460	88	231	926	106	1,032
1893†	160	412	103	265	940	120	1,060
1894†	317	444	77	177	1,015	112	1,127
1895	55	426	97	345	923	119	1,042
1896	173	424	68	237	902	123	1,025
1897	19	480	57	277	833	97	930
1898	27	431	64	257	779	129	908
1899	54	437	69	241	801	115	916

† These years are marked by serious explosions of fire-damp, causing death to over 100 persons.

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COMPARATIVE TABLES.

DEATHS FROM ACCIDENTS.

TABLE No. 30.—**Number of Deaths** from different causes of ACCIDENTS in and about MINES under the **Metalliferous Mines Regulation Acts**, from 1873 to 1899.

YEAR.	Number of Deaths from Accidents.						
	From different causes Underground.					Total on Surface.	Gross Total.
	Explosions of Fire-damp.	Falls of Ground.	Shaft Accidents.	Mis-cellaneous.	Total.		
1873	—	27	30	25	82	22	104
1874	—	40	34	15	89	14	103
1875	—	32	35	33	100	19	119
1876	—	25	16	23	64	6	70
1877	—	41	21	24	86	11	97
1878	—	27	19	23	69	8	77
1879	—	24	16	16	56	8	64
1880	—	31	21	19	71	13	84
1881	—	36	22	32	90	9	99
1882	—	30	27	17	74	18	92
Average for 10 years	—	31	24	23	78	13	91
1883	—	31	27	21	79	7	86
1884	—	22	12	16	50	6	56
1885	—	31	8	19	58	6	64
1886	—	21	11	23	55	10	65
1887	5	23	13	14	55	1	56
1888	1	25	14	25	65	7	72
1889	—	28	12	15	55	9	64
1890	—	14	10	14	38	8	46
1891	—	24	13	9	46	5	51
1892	—	19	12	13	44	8	52
Average for 10 years	—	24	13	17	54	7	61
1893	—	23	12	27	62	3	65
1894	—	13	16	11	40	6	46
1895	—	21	13	13	47	7	54
1896	—	15	11	7	33	7	40
1897	—	10	2	30	42	7	49
1898	—	20	2	5	27	6	33
1899	—	19	14	17	50	6	56

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COMPARATIVE TABLES.

ACCIDENT DEATH-RATES.

TABLE No. 31.—**Ratio of Annual Mortality** from different causes of ACCIDENTS in and about MINES classed under the **Coal Mines Regulation Acts**, per 1,000 PERSONS EMPLOYED, and per 1,000,000 tons of MINERAL RAISED, in each year from 1873 to 1899.

YEAR.	Death-rate from Accidents per 1,000 Persons							Death-rate from Accidents Above and Under ground per 1,000,000 tons of Mineral raised.
	Employed Underground.					Employed Above-ground, from all Causes Above-ground.	Employed Above and Under ground.	
	By Explosions of Fire-damp.	By Falls of Ground.	Shaft Accidents.	Miscellaneous.	From all Causes Underground.			
1873	·25	1·20	·42	·54	2·41	·81	2·08	7·48
1874	·39	·96	·36	·50	2·21	·99	1·96	7·50
1875†	·67	1·07	·40	·53	2·68	·92	2·32	8·42
1876	·23	1·08	·32	·36	2·01	1·05	1·81	6·26
1877†	·87	1·14	·33	·47	2·81	·99	2·44	8·12
1878†	1·53	1·22	·29	·42	3·46	·93	2·97	9·69
1879	·48	1·11	·31	·45	2·34	·77	2·04	6·69
1880†	1·28	1·18	·23	·46	3·14	·94	2·72	8·16
1881	·29	1·13	·28	·48	2·17	·81	1·93	5·65
1882†	·62	1·15	·29	·51	2·57	·96	2·23	6·57
Averages for 10 years	·65	1·12	·32	·47	2·57	·92	2·24	7·42
1883	·32	1·13	·23	·59	2·27	1·10	2·05	5·90
1884	·15	1·14	·21	·50	2·01	·96	1·81	5·39
1885†	·80	1·03	·18	·52	2·53	·98	2·21	6·63
1886	·30	1·09	·20	·44	2·04	·82	1·83	5·61
1887	·35	1·10	·20	·50	2·14	·81	1·89	5·75
1888	·11	1·07	·17	·48	1·83	·92	1·65	4·86
1889	·30	1·00	·16	·63	2·09	1·21	1·91	5·61
1890†	·57	·86	·17	·48	2·09	1·09	1·89	5·96
1891	·10	·89	·22	·44	1·65	·93	1·50	4·95
1892†	·23	·79	·17	·46	1·65	·83	1·49	5·11
Averages for 10 years	·32	1·00	·19	·50	2·01	·96	1·81	5·65
1893†	·29	·75	·19	·48	1·71	·90	1·55	6·04
1894†	·56	·78	·14	·31	1·78	·83	1·60	5·65
1895	·10	·75	·17	·61	1·64	·88	1·49	5·17
1896	·31	·76	·12	·43	1·62	·91	1·48	4·92
1897	·03	·86	·10	·50	1·49	·71	1·34	4·32
1898	·05	·76	·11	·45	1·37	·92	1·28	4·22
1899	·09	·75	·12	·41	1·37	·79	1·26	3·93

† These years are marked by serious explosions of fire-damp, causing death to over 100 persons.

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COMPARATIVE TABLES.

ACCIDENT DEATH-RATES.

TABLE No. 32—Ratio of Annual Mortality from different causes of ACCIDENTS in and about MINES classed under the **Metalliferous Mines Regulation Acts**, per 1,000 PERSONS EMPLOYED, in each year from 1873 to 1899.

YEAR.	Death-rate from Accidents per 1,000 Persons						
	Employed Underground.					Employed Above-ground, from all Causes Above-ground.	Employed Above and Under-ground.
	By Explosions of Fire-damp.	By Falls of Ground.	Shaft Accidents.	Miscellaneous.	From all Causes Under-ground.		
1873...	—	·72	·80	·67	2·19	·87	1·66
1874...	—	1·18	1·00	·44	2·61	·63	1·83
1875...	—	·92	1·00	·95	2·86	·82	2·05
1876...	—	·73	·47	·67	1·88	·26	1·22
1877...	—	1·20	·61	·71	2·52	·47	1·69
1878...	—	·88	·62	·75	2·25	·38	1·50
1879...	—	·85	·57	·57	1·98	·43	1·36
1880...	—	·97	·66	·59	2·22	·62	1·59
1881...	—	1·08	·66	·06	2·70	·42	1·80
1882...	—	·88	·80	·50	2·19	·83	1·66
Averages for 10 years	—	·94	·72	·68	2·35	·58	1·62
1883...	—	1·02	·89	·69	2·59	·35	1·71
1884...	—	·83	·45	·60	1·88	·34	1·27
1885...	—	1·25	·32	·76	2·33	·37	1·56
1886...	—	·85	·44	·93	2·22	·61	1·58
1887...	·20	·92	·52	·56	2·19	·06	1·34
1888...	·04	·96	·54	·96	2·49	·40	1·66
1889...	—	1·09	·47	·59	2·15	·05	1·47
1890...	—	·56	·40	·56	1·53	·47	1·09
1891...	—	1·04	·56	·39	1·99	·31	1·29
1892...	—	·84	·53	·58	1·95	·51	1·36
Averages for 10 years	·02	·94	·52	·67	2·15	·39	1·44
1893...	—	1·08	·57	1·27	2·92	·20	1·78
1894...	—	·65	·80	·55	2·00	·43	1·36
1895...	—	1·07	·66	·66	2·39	·51	1·62
1896...	—	·78	·57	·36	1·71	·51	1·21
1897...	—	·50	·10	1·51	2·11	·52	1·46
1898...	—	·99	·10	·25	1·34	·43	·96
1899	—	·92	·68	·83	2·43	·41	1·59

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Mines Inspection Districts,

WITH THE NAMES AND ADDRESSES OF INSPECTORS AND ASSISTANT INSPECTORS, and of SECRETARIES to BOARDS for EXAMINATIONS.

Corrected to March 1900.

DISTRICTS.		Names and Addresses of Chief Inspectors, and Dates of Appointments.	Names and Addresses of Assistant Inspectors, and Dates of Appointments.	Names and Addresses of Secretaries to Boards for Examinations, and Months in which the Examinations are held.
Under the Coal Mines Act.	Under the Metalliferous Mines Act, and the Quarries Act.			
1. SCOTLAND, EAST DISTRICT, comprising Aberdeen, Banff, Berwick, Caithness, Clackmannan, Cromarty, Edinburgh, Fife, Forfar, Haddington, Inverness, Kincardine, Kinross, Linlithgow, Moray or Elgin, Nairn, Orkney and Shetland, Peebles, Perth, Ross, Roxburgh, Selkirk, Sutherland, and parts of Lanark and Stirling.	The same as under Coal Mines Act.	J. B. Atkinson, Esq., 10, Foremount Terrace, Glasgow. 1873. Promoted 1889.	Rob. McLaren, Esq., Uddingston, Glasgow. 1885. Hugh Johnstone, Esq., 77, Montgomerie Street, Kelvinside, Glasgow. 1887.	Robert Calder, Esq., 3, Fintry Place, Broughty Ferry, N.B. (*May.*)
2. SCOTLAND, WEST DISTRICT, comprising Argyll, Ayr, Bute, Dumfries, Dumbarton, Kirkcudbright, Renfrew, Wigtown, and parts of Lanark and Stirling.	The same as under Coal Mines Act.	John M. Ronaldson, Esq., 44, Athole Gardens, Glasgow, 1875. Promoted 1886.	Thos. H. Mottram, Esq., 3, Beauly Terrace, Kelvinside, N., Glasgow. 1889. Andrew Pearson, Esq., Balvaird, Rutherglen, Glasgow. 1892.	Stuart Foulis, Esq., 140, Hope Street, Glasgow. (*November.*)
3. NEWCASTLE DISTRICT, comprising Cumberland, Durham (North), and Northumberland.	The same as under Coal Mines Act, with the addition of the detached part of North Lancashire.	John L. Hedley, Esq., 2, Devonshire Terrace, Newcastle-on-Tyne. 1874. Promoted 1891.	G. F. Bell, Esq., 20, Wentworth Place, Newcastle-on-Tyne. 1886. Wm. Leck, Esq., Cleator Moor, Cumberland. 1894. A. D. Nicholson, Esq., 14, Chatsworth Square, Carlisle. 1897.	M. Walton Brown, Esq. Neville Hall, Newcastle on-Tyne. (*January.*)
4. DURHAM DISTRICT, comprising Durham (South), Westmorland, and Yorkshire (North Riding).	The same as under Coal Mines Act.	R. Donald Bain, Esq., Durham. 1877. Promoted 1896.	J. Plummer, Esq., Bishop Auckland. 1885. W. Walker, Esq., 2, Pimlico, Durham. 1889.	G. W. Bartlett, Esq., Red Hall, Haughton-le-Skerne. Darlington. (*July.*)
5. YORKSHIRE AND LINCOLNSHIRE DISTRICT, comprising Lincolnshire, and Yorkshire (exclusive of North Riding).	The same as under Coal Mines Act.	Frank N. Wardell, Esq., Wath-on-Dearne, Rotherham. 1867.	Jas. Mellors, Esq., Outwood, Wakefield. 1885. J. R. R. Wilson, Esq., 1, St. Mary's Road, Newton Park, Leeds. 1892.	John R. Jeffery, Esq., Solicitor, 5, Picadilly, Bradford. (*June.*)

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Table of Districts, 1899.—*continued.*

Districts.		Names and Addresses of Chief Inspectors, and Dates of Appointments.	Names and Addresses of Assistant Inspectors, and Dates of Appointments.	Names and Addresses of Secretaries to Boards for Examinations, and Months in which the Examinations are held.
Under the Coal Mines Act.	Under the Metalliferous Mines Act, and the Quarries Act.			
6. MANCHESTER DISTRICT, comprising North and East Lancashire and IRELAND; also Kent, Middlesex, Surrey, and Sussex.	North and East Lancashire (except the detached part of North Lancashire), and Ireland.	John Gerrard, Esq., Worsley, Manchester. 1874. Promoted 1892.	Wm. Saint, Esq., Kersal Bank, Higher Broughton, Manchester. 1887. G. B. Harrison, Esq., Swinton, Manchester. 1893.	T. Ratcliffe Ellis, Esq., 18, King Street, Wigan. (*December.*)
7. LIVERPOOL DISTRICT, comprising Anglesey, Denbigh, Flint, and West Lancashire.	West Lancashire - -	Henry Hall, Esq., Rainhill, Lancashire. 1873. Promoted 1874.	D. H. F. Mathews, Esq., Hoole, Chester. 1892.	T. Ratcliffe Ellis, Esq., 18, King Street, Wigan. (*June.*)
8. MIDLAND DISTRICT, comprising Bedford, Berks, Buckingham, Cambridge, Derby, Hertford, Huntingdon, Leicester, Northampton, Nottingham, Oxford, Rutland, and Warwick.	The same as under Coal Mines Act.	Arthur H. Stokes, Esq., Green Hill, Derby. 1874. Promoted 1887.	W. H. Hepplewhite, Esq., St. Ann's Hill, Nottingham. 1885. H. R. Hewitt, Esq., Breedon Hill Road, Derby. 1891.	William Saunders, Esq., Wilson Street, Derby. (*October.*)
9. ———	NORTH WALES, &C. DISTRICT, comprising Anglesey, Brecon, Cardigan, Carnarvon, Denbigh, Flint, Merioneth, Montgomery, Radnor, and the Isle of Man, also Kent, Middlesex, Surrey, and Sussex.	C. Le Neve Foster, Esq., Llandudno. 1873.	G. J. Williams, Esq., Coed Menai, Bangor. 1894. O. R. Jones, Esq., 5, Spring Gardens, Chester. 1894.	———
10. NORTH STAFFORDSHIRE DISTRICT, comprising Cheshire, North Staffordshire, and Shropshire.	The same as under Coal Mines Act.	W. N. Atkinson, Esq., Barlaston, Stoke-on-Trent. 1873. Promoted 1889.	H. R. Makepeace, Esq., Trentham, Stoke-on-Trent. 1890.	Joseph Knight, Esq., Newcastle-under-Lyme. (*June.*)
11. SOUTH STAFFORDSHIRE DISTRICT, comprising South Staffordshire, Worcestershire, Essex, Norfolk, and Suffolk.	The same as under Coal Mines Act.	W. Beattie Scott, Esq., Park Avenue, Handsworth, Birmingham. 1873. Promoted 1883.	W. H. Pickering, Esq., Compton, Wolverhampton. 1883.	Robert S. Williamson, Esq., Cannock Wood House, Hednesford. (*January.*)
12. SOUTH-WESTERN DISTRICT, comprising Cornwall, Devon, Dorset, Gloucester, Hampshire, Hereford, Monmouth, Somerset, Wilts, and portions of Brecon and Glamorgan.	Cornwall, Devon, Dorset, Gloucester, Hampshire, Hereford, Monmouth, Somerset, Wilts, and part of Glamorgan	Joseph S. Martin, Esq., The Vikings, Durdham Park, Bristol. 1873. Promoted 1886.	E. E. V. Stokes, Esq., Bosvigo Vean, Truro. 1891. Chas. L. Robinson, Esq., 8, Serpentine Road, Newport, Mon. 1896.	S. J. Thomas, Esq., Forest House, Coleford, Gloucester. (*September.*)
13. SOUTH WALES DISTRICT, comprising Cardigan, Carmarthen, Pembroke, Radnor, a portion of Brecon, and the main part of Glamorgan.	Carmarthenshire, Pembrokeshire, and the main part of Glamorganshire.	Joseph T. Robson, Esq., Ravensworth, Eaton Grove, Swansea. 1873. Promoted 1887.	Fred. A. Gray, Esq., Neath. 1886. J. Dyer Lewis, Esq., 183, Richmond Road, Roath, Cardiff. 1892. G. F. Adams, Esq., 12, Park Place, Cardiff. 1894. F. N. White, Esq., 9, Mirador Crescent, Swansea. 1895.	Robert T. Rees, Esq., Glandare, Aberdare. (*May*)

CLERK OF MINERAL STATISTICS.

James B. Jordan, Esq., 1858 - - - Home Office, Whitehall, London.

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MAP OF THE BRITISH ISLES SHEWING THE DISTRICTS ASSIGNED TO HER MAJESTY'S INSPECTORS OF MINES. UNDER THE COAL MINES REGULATION ACT.

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MAP OF THE BRITISH ISLES SHEWING THE DISTRICTS ASSIGNED TO HER MAJESTY'S INSPECTORS OF MINES. UNDER THE METALLIFEROUS MINES REGULATION ACT. AND THE QUARRIES ACT.

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MINES AND QUARRIES:

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For 1899.

PART I.—DISTRICT STATISTICS.

STATISTICS OF THE PERSONS EMPLOYED, OUTPUT, AND ACCIDENTS AT MINES AND QUARRIES IN THE UNITED KINGDOM, ARRANGED ACCORDING TO THE INSPECTION DISTRICTS.

Presented to both Houses of Parliament by Command of Her Majesty.

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For 1899.

PART II.—LABOUR.

GENERAL REPORT AND STATISTICS RELATING TO PERSONS EMPLOYED AND ACCIDENTS AT MINES AND QUARRIES IN THE UNITED KINGDOM, AND TO THE ENFORCEMENT OF THE MINES AND QUARRIES ACTS.

EDITED BY

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GENERAL REPORT AND STATISTICS

For 1899.

PART II.—LABOUR.

GENERAL REPORT AND STATISTICS RELATING TO PERSONS EMPLOYED AND ACCIDENTS AT MINES AND QUARRIES IN THE UNITED KINGDOM, AND TO THE ENFORCEMENT OF THE MINES AND QUARRIES ACTS.

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MINES AND QUARRIES:

GENERAL REPORT AND STATISTICS

For 1899.

PART II.—LABOUR.

This part of the General Report and Statistics is divided into four sections, as follows :—

1. Persons Employed.
2. Accidents.
3. Prosecutions.
4. General Remarks.

The classification of Mines adopted in this Part is not, as in Part I., a classification according to the Acts of Parliament which are applicable to the mines, but a classification according to the different kinds of minerals worked. Three divisions of mines accordingly are formed—A. Coal mines, in which are included all mines worked for coal, whether alone or together with other minerals, such as ironstone, fireclay, &c. ; B. Iron mines, in which no coal is produced ; C. Other mines.

Similarly the local divisions adopted in this Part are not, as in Part I., the artificial districts assigned to the Inspectors, but natural divisions such as coalfields (described on the following page) or the ordinary geographical divisions by counties.

The Quarries dealt with in these statistics, as in Part I., are those which are subject to the Quarries Act, 1894, *i.e.*, quarries which in any part are more than 20 feet deep.

SECTION 1.

Persons Employed.

The total number of persons employed at mines and at the quarries under the Quarries Act in the United Kingdom and the Isle of Man during the year 1899 was 862,161, of whom 764,166 were employed in or about mines, and 97,995 in or about quarries.

MINES.

Of the 764,166 persons employed at mines 603,627 worked below ground, and 160,539 above ground ; of the latter, 5,161 were females. Compared with the preceding year there is an increase of 16,330 males working below ground, and an increase of 6,676 males and of 35 females working above ground, making a total increase of 23,041 persons. The greater part of the increase occurred at coal mines. The total figure is the largest yet recorded.

The increase in the number of females employed occurred at coal mines only ; at metalliferous mines there was a diminution in the number of female workers.

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The following table gives a general summary of the number of persons employed in each of the three classes of mines :—

TABLE 33.

PERSONS Employed at MINES, classified according to AGE and SEX.

Kind of Mine.	Number of Mines.	Under Ground.			Above Ground.			Gross Total.	Percentage of Total Number.	Comparison of Total Number Employed with that of preceding Year.
		Males.			Males.	Females.	Total Above Ground.			
		Ages 12 to 16.	Ages above 16.	Total.	Total.	Total.				
Coal mines ...	3,089	44,293	527,513	571,806	138,745	4,654	143,399	715,205	93·6	+21,544
Iron mines ...	152	434	12,775	13,209	3,961	46	4,007	17,216	2·2	— 36
Other mines ...	769	477	18,135	18,612	12,672	461	13,133	31,745	4·2	+ 1,533
Total for 1899	**4,010**	**45,204**	**558,423**	**603,627**	**155,378**	**5,161**	**160,539**	**764,166**	**100**	**+23,041**
Total for preceding year	4,002	43,675	543,622	587,297	148,702	5,126	153,828	741,125	100	+12,412

A.—COAL MINES.

The statistics relating to coal mines have been arranged according to the principal coalfields ; the extent of each is set forth in the following table.

TABLE 34.

COALFIELDS.

Country.	Name of Coalfield.	Counties in which Coal is being worked.
SCOTLAND	1. Scotch coalfields	Argyll, Ayr, Clackmannan, Dumbarton, Dumfries, Edinburgh, Fife, Haddington, Kinross, Lanark, Linlithgow, Peebles, Perth, Renfrew, Stirling, and Sutherland (Oolitic).
ENGLAND (excluding Monmouthshire).	2. Northern coalfield	Durham and Northumberland.
	3. Yorkshire, &c., coalfield ...	Derby, Nottingham, and West Riding of Yorkshire.
	4. Lancashire and Cheshire coalfield.	Chester and Lancaster.
	5. Midland coalfields	Leicester, Salop, Stafford, Warwick, and Worcester.
	6. Small detached coalfields ...	Cumberland, Gloucester, Kent,* North Riding of Yorkshire, Somerset, and Westmorland.
WALES (including Monmouthshire).	7. North Wales coalfield ...	Denbigh and Flint.
	8. South Wales coalfield ...	Brecon, Carmarthen, Glamorgan, Monmouth, and Pembroke.
IRELAND	9. Irish coalfields	Antrim, Cork, Kilkenny, Leitrim, Queen's, Roscommon, Tipperary, and Tyrone.

This classification, as explained in the volume for 1897, is to a slight extent artificial ; but, for the purpose of making comparisons of output and safety, the grouping of counties which is adopted is sufficiently accurate.

* No coal worked at present ; sinking for coal proceeding.

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TABLE 35.

PERSONS Employed at COAL MINES, classified according to the COALFIELDS.

Coalfield.	No. of Mines.	Under Ground. Males. Ages 12 to 16.	Under Ground. Males. Ages above 16.	Under Ground. Males. Total.	Above Ground. Males. Ages 12 to 13.	Above Ground. Males. Ages 13 to 16.	Above Ground. Males. Ages above 16.	Above Ground. Males. Total.	Above Ground. Females. Ages 12 to 13.	Above Ground. Females. Ages 13 to 16.	Above Ground. Females. Ages above 16.	Above Ground. Females. Total.	Total Above Ground.	Gross Total.	Comparison with preceding Year.
1. Scotch coalfields	483	5,096	67,973	73,069	16	1,509	13,491	15,016	2	416	982	1,400	16,416	90,385	+ 3,684
2. Northern coalfield.	392	8,617	103,932	112,549	3	4,543	28,309	32,855	—	—	37	37	32,892	145,441	+ 5,370
3. Yorkshire, &c., coalfield.	629	10,649	119,427	130,076	26	3,423	30,667	34,116	—	—	2	2	34,118	164,194	+ 5,587
4. Lancashire and Cheshire coalfield.	403	3,725	63,259	66,984	26	1,517	12,748	14,291	—	246	1,899	2,145	16,436	83,420	+ 54
5. Midland coalfields.	444	2,517	47,112	49,629	2	1,501	14,433	15,936	—	7	228	235	16,171	65,800	+ 2,907
6. Small detached coalfields.	117	1,022	15,059	16,081	6	312	3,606	3,924	—	8	269	277	4,201	20,282	- 314
7. North Wales coalfield.	61	449	9,355	9,804	—	232	1,959	2,191	—	—	13	13	2,204	12,008	+ 475
8. South Wales coalfield.	536	11,295	100,686	111,981	23	1,065	19,070	20,158	—	27	516	543	20,701	132,682	+ 3,869
9. Irish coalfields	24	23	710	733	—	14	244	258	—	—	2	2	260	993	+ 12
Total for 1899.	**3,089**	**44,293**	**527,513**	**571,806**	**102**	**14,116**	**124,527**	**138,745**	**2**	**704**	**3,948**	**4,654**	**143,399**	**715,205**	**+ 21,544**
Total for preceding year	3,121	42,749	513,615	556,364	156	13,368	119,202	132,726	6	622	3,943	4,571	137,297	693,661	+ 12,130

Table 35 shows that, while the number of mines at work has been smaller, there has been a net increase of 21,544 persons at the coal mines. The increase has been greatest in the case of the Northern and the Yorkshire, &c. coalfields. The number of females employed shows an increase as it did last year.

The two following tables show the proportion of persons employed in the several coalfields :—

TABLE 36.

PROPORTION of PERSONS Employed in each COALFIELD, from 1895–1899.

Coalfield.	Percentage of Total Number of Persons Employed. 1895.	1896.	1897.	1898.	1899.
1. Scotch coalfields	12·8	12·2	12·2	12·4	**12·6**
2. Northern coalfield	19·7	20·2	20·3	20·2	**20·3**
3. Yorkshire, &c., coalfield	22·5	22·8	22·8	22·9	**23·0**
4. Lancashire and Cheshire coalfield ...	12·7	12·4	12·4	12·0	**11·7**
5. Midland coalfields	9·0	9·3	9·0	9·1	**9·2**
6. Small detached coalfields	3·0	2·9	2·9	3·0	**2·8**
7. North Wales coalfield	1·9	1·7	1·7	1·7	**1·7**
8. South Wales coalfield	18·3	18·4	18·6	18·6	**18·6**
9. Irish coalfields	0·1	0·1	0·1	0·1	**0·1**
	100·0	100·0	100·0	100·0	**100·0**

The Yorkshire, &c., coalfield, including the West Riding of York and the counties of Derby and Nottingham, employs nearly one-quarter of the total coal-mining population of the United Kingdom.

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TABLE 37.

COMPARISON of COALFIELDS as regards PROPORTION of PERSONS of different AGE and SEX Employed BELOW GROUND and ABOVE GROUND.

Coalfield.	Under Ground.			Above Ground.					Total Above and Below Ground.
	Males.			Males.		Females.		Total.	
	Ages 12 to 16.	Ages above 16.	Total.	Ages 12 to 16.	Ages above 16.	Ages 12 to 16.	Ages above 16.		
	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.	
1. Scotch coalfields ...	6·6	75·2	81·8	1·7	14·9	0·5	1·1	18·2	100·0
2. Northern coalfield	5·9	71·5	77·4	3·1	19·5	—	—	22·6	100·0
3. Yorkshire, &c., coalfield.	6·5	72·7	79·2	2·1	18·7	—	—	20·8	100·0
4. Lancashire and Cheshire coalfield.	4·5	75·8	80·3	1·8	15·3	0·3	2·3	19·7	100·0
5. Midland coalfields	3·8	71·6	75·4	2·3	21·9	—	0·4	24·6	100·0
6. Small detached coalfields.	5·0	74·3	79·3	1·5	17·8	—	1·4	20·7	100·0
7. North Wales coalfield.	3·8	77·9	81·7	1·9	16·3	—	0·1	18·3	100·0
8. South Wales coalfield.	8·5	75·9	84·4	0·8	14·4	—	0·4	15·6	100·0
9. Irish coalfields ...	2·3	71·5	73·8	1·4	24·6	—	0·2	26·2	100·0
Total for 1899	**6·2**	**73·8**	**80·0**	**2·0**	**17·4**	**0·1**	**0·5**	**20·0**	**100·0**
Total for preceding year.	6·2	74·0	80·2	1·9	17·2	0·1	0·6	19·8	100·0

Table 37 shows that four-fifths of the persons employed at coal mines work below ground and one-fifth on the surface.

TABLE 38.

COMPARISON of COUNTRIES as regards the PROPORTION of PERSONS of different AGE and SEX Employed BELOW GROUND and ABOVE GROUND.

Country.	Under Ground.			Above Ground.					Total Above and Below Ground.
	Males.			Males.		Females.		Total.	
	Ages 12 to 16.	Ages above 16.	Total.	Ages 12 to 16.	Ages above 16.	Ages 12 to 16.	Ages above 16.		
	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.	Per-centage.	
England	5·7	73·0	78·7	2·3	18·4	0·1	0·5	21·3	100
Wales...	7·9	76·1	84·0	1·0	14·8	—	0·2	16·0	100
Scotland	6·6	75·2	81·8	1·7	14·9	0·5	1·1	18·2	100
Ireland	2·3	71·5	73·8	1·4	24·6	—	0·2	26·2	100
Total for 1899	**6·2**	**73·8**	**80·0**	**2·0**	**17·4**	**0·1**	**0·5**	**20·0**	**100**
Total for preceding year.	6·2	74·0	80·2	1·9	17·2	0·1	0·6	19·8	100

The percentages in Tables 37 and 38 differ very slightly from those of previous years. The Welsh collieries employ a larger number of persons below ground in proportion to the total number of workers than the other coalfields.

The total percentage of young persons (*i.e.*, below 16) employed in this industry, both above and below ground, is almost identical with that of the previous year.

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The number of persons employed in and about the coal mines in each county is shown in the following table :—

TABLE 39.

NUMBER of PERSONS Employed in and about COAL MINES, classified according to AGE, SEX, and COUNTY, during the Year 1899.

County.	Number of Mines.	Below Ground.			Above Ground.								Total Above Ground.	Gross Total.	Comparison with preceding year.
		Males.			Males.				Females.						
		Ages 12 to 16.	Ages above 16.	Total.	Ages 12 to 13.	Ages 13 to 16.	Ages above 16.	Total.	Ages 12 to 13.	Ages 13 to 16.	Ages above 16.	Total.			
ENGLAND:															
Chester	20	89	1,900	1,989	1	32	518	551	—	—	—	—	551	2,540	+ 22
Cumberland ..	42	233	5,661	5,894	5	171	1,550	1,726	—	8	269	277	2,003	7,897	+ 71
Derby	182	3,068	32,077	35,145	2	881	7,955	8,838	—	—	—	—	8,838	43,983	+ 1,111
Durham	269	6,323	75,937	82,260	1	3,611	22,156	25,768	—	—	32	32	25,800	108,060	+ 2,991
Gloucester ..	44	325	5,421	5,746	1	92	1,150	1,243	—	—	—	—	1,243	6,989	- 390
Kent	1	—	90	90	—	2	76	78	—	—	—	—	78	168	+ 18
Lancaster	383	3,636	61,359	64,995	25	1,485	12,230	13,740	—	246	1,899	2,145	15,885	80,880	+ 32
Leicester	30	323	4,770	5,093	—	121	1,253	1,374	—	—	—	—	1,374	6,467	+ 282
Monmouth ..	134	2,854	24,119	26,973	10	224	4,364	4,598	—	13	260	273	4,871	31,844	+ 1,479
Northumberland	123	2,294	27,995	30,289	2	932	6,153	7,087	—	—	5	5	7,092	37,381	+ 2,379
Nottingham ..	56	1,820	18,339	20,159	2	437	4,678	5,117	—	—	—	—	5,117	25,276	+ 777
Salop	63	91	2,495	2,586	—	61	658	719	—	7	87	94	813	3,399	- 132
Somerset	24	464	3,861	4,325	—	47	822	869	—	—	—	—	869	5,194	- 21
Stafford	282	1,677	31,679	33,356	2	1,041	10,165	11,208	—	—	101	101	11,309	44,665	+ 2,607
Warwick	31	363	6,464	6,827	—	218	1,835	2,053	—	—	—	—	2,053	8,880	+ 294
Westmorland ..	2	—	7	7	—	—	3	3	—	—	—	—	3	10	- 2
Worcester	38	63	1,704	1,767	—	60	522	582	—	—	40	40	622	2,389	- 244
York	395	5,761	69,030	74,791	22	2,105	18,039	20,166	—	—	2	2	20,168	94,959	+ 3,699
Total for England ..	2,119	29,384	372,908	402,292	73	11,520	94,127	105,720	—	274	2,695	2,969	108,689	510,981	+14,983
WALES:															
Brecon	18	139	1,083	1,222	—	12	199	211	—	1	10	11	222	1,444	+ 128
Carmarthen ..	48	301	3,579	3,880	3	102	897	1,002	—	—	2	2	1,004	4,884	+ 256
Denbigh	35	386	7,419	7,805	—	183	1,515	1,698	—	—	13	13	1,711	9,516	+ 438
Flint	26	63	1,936	1,999	—	49	444	493	—	—	—	—	493	2,492	+ 37
Glamorgan ..	324	7,970	71,643	79,613	9	726	13,513	14,248	—	13	234	247	14,495	94,108	+ 2,162
Pembroke	12	31	262	293	1	1	97	99	—	—	10	10	109	402	- 156
Total for Wales ..	463	8,890	85,922	94,812	13	1,073	16,665	17,751	—	14	269	283	18,034	112,846	+ 2,865
SCOTLAND:															
Argyll	1	4	45	49	—	—	11	11	—	—	—	—	11	60	+ 16
Ayr	80	946	9,239	10,185	4	263	1,595	1,862	—	—	1	1	1,863	12,048	+ 258
Clackmannan ..	5	61	772	833	—	5	141	146	—	—	7	7	153	986	- 33
Dumbarton ..	8	83	1,416	1,499	—	63	433	496	—	—	20	20	516	2,015	- 93
Dumfries	4	7	282	289	—	8	63	71	—	—	—	—	71	360	+ 7
Edinburgh ..	16	220	3,394	3,614	—	92	868	960	—	2	1	3	963	4,577	- 13
Fife	53	1,016	10,133	11,149	1	103	2,028	2,132	—	181	323	504	2,636	13,785	+ 355
Haddington ..	7	62	895	957	—	27	149	176	—	—	—	—	176	1,133	+ 50
Kinross	2	—	12	12	—	1	15	16	—	—	—	—	16	28	- 19
Lanark	235	2,953	34,390	37,343	8	769	6,452	7,229	—	163	456	619	7,848	45,191	+ 2,441
Linlithgow ..	22	149	2,124	2,273	—	55	423	478	—	26	59	85	563	2,836	+ 223
Peebles	1	—	2	2	—	—	1	1	—	—	—	—	1	3	—
Perth	1	1	1	2	—	—	—	—	—	—	—	—	—	2	- 3
Renfrew	4	12	135	147	—	3	35	38	—	—	—	—	38	185	- 96
Stirling	43	482	5,115	5,597	3	120	1,273	1,396	2	44	115	161	1,557	7,154	+ 80
Sutherland ..	1	—	18	18	—	—	4	4	—	—	—	—	4	22	+ 1
Total for Scotland ..	483	5,996	67,973	73,969	16	1,509	13,491	15,016	2	416	982	1,400	16,416	90,385	+ 3,684

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NUMBER of PERSONS Employed in COAL MINES, &c.—*continued.*

County.	Number of Mines.	Below Ground. Males. Ages 12 to 16.	Below Ground. Males. Ages above 16.	Below Ground. Males. Total.	Above Ground. Males. Ages 12 to 13.	Above Ground. Males. Ages 13 to 16.	Above Ground. Males. Ages above 16.	Above Ground. Males. Total.	Above Ground. Females. Ages 12 to 13.	Above Ground. Females. Ages 13 to 16.	Above Ground. Females. Ages above 16.	Above Ground. Females. Total.	Total Above Ground.	Gross Total.	Comparison with preceding year.
IRELAND:															
Antrim	2	—	25	25	—	2	11	13	—	—	—	—	13	38	+ 1
Cork	1	—	—	—	—	—	6	6	—	—	—	—	6	6	+ 1
Kilkenny	4	11	277	288	—	8	89	97	—	—	—	—	97	385	+ 9
Leitrim	2	—	21	21	—	—	4	4	—	—	—	—	4	25	- 4
Queen's County ..	2	—	192	192	—	—	54	54	—	—	—	—	54	246	+ 14
Roscommon ..	4	12	39	51	—	—	21	21	—	—	—	—	21	72	+ 4
Tipperary. ..	5	—	81	81	—	—	33	33	—	—	—	—	33	114	- 11
Tyrone	4	—	75	75	—	4	26	30	—	—	2	2	32	107	- 2
Total for Ireland ..	24	23	710	733	—	14	244	258	—	—	2	2	260	993	+ 14
Total for the United Kingdom.	3,089	44,293	527,513	571,806	102	14,116	124,527	138,745	2	704	3,948	4,654	143,399	715,205	+11,2

This table enables the changes in the working population to be referred to the particular counties in which the increase or decrease took place.

The increase in the number of persons employed is especially noticeable in Durham, Staffordshire, Northumberland, Yorkshire, Glamorganshire and Lanarkshire.

B.—IRON MINES.*

TABLE 40.

PERSONS Employed at IRON MINES, classified according to COUNTRY, AGE, and SEX.

Country.	No. of Mines.	Under Ground. Males. Ages 12 to 16.	Under Ground. Males. Ages above 16.	Under Ground. Males. Total.	Above Ground. Males. Total.	Above Ground. Females. Total.	Above Ground. Total.	Total Above and Below Ground.	Comparison with preceding year.
England	130	354	11,493	11,847	3,724	46	3,770	15,617	— 44
Wales	1	—	13	13	1	—	1	14	+ 9
Scotland	10	67	996	1,063	196	—	196	1,259	— 20
Ireland	11	13	273	286	40	—	40	326	+ 19
Total for 1899 ...	**152**	**434**	**12,775**	**13,209**	**3,961**	**46**	**4,007**	**17,216**	— 36
Total for preceding year.	148	487	12,754	13,241	3,965	46	4,011	17,252	+ 17

* Exclusive of open workings for iron ore.

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There is a very slight decrease in the number of persons employed at iron mines; for all practical purposes the number may be looked upon as stationary.

Table 41.

Comparison of Countries as regards the Proportion of Persons of different Age and Sex Employed Below Ground and Above Ground.

Country.	Under Ground.			Above Ground.			Total. Above and Below Ground.
	Males.			Males.	Females.	Total.	
	Ages 12 to 16.	Ages above 16.	Total.	Total.	Total.		
	Percentage.	Percentage.	Percentage.	Percentage.	Percentage.	Percentage.	
England	2·3	73·6	75·9	23·8	0·3	24·1	100·0
Wales	—	92·9	92·9	7·1	—	7·1	100·0
Scotland	5·3	79·1	84·4	15·6	—	15·6	100·0
Ireland	4·0	83·7	87·7	12·3	—	12·3	100·0
Total for 1899...	**2·5**	**74·2**	**76·7**	**23·0**	**0·3**	**23·3**	**100·0**
Total for preceding year.	2·8	73·9	76·7	23·0	0·3	23·3	100·0

The underground workers form rather more than three-quarters of the total number of persons employed at iron mines, as against four-fifths in the case of coal mines.

Table 42.

Number of Persons Employed in and about Iron Mines, classified according to Age, Sex, and County, during the Year 1899.

County.	Number of Mines.	Under Ground.			Above Ground.			Total Above and Below Ground.	Comparison with preceding year.
		Males.			Males.	Females.	Total.		
		Ages 12 to 16.	Ages above 16.	Total.	Total.	Total.			
England:									
Cumberland ...	45	21	3,539	3,560	1,011	—	1,011	4,571	—187
Devon	5	—	26	26	9	—	9	35	— 13
Durham	1	—	51	51	9	—	9	60	+ 5
Gloucester ...	14	51	174	225	55	—	55	280	— 23
Lancaster ...	21	—	1,872	1,872	1,010	—	1,010	2,882	—146
Lincoln	6	—	83	83	122	—	122	205	— 11
Salop	2	5	81	86	15	46	61	147	+ 7
Stafford	6	9	170	179	80	—	80	259	+ 98
York	30	268	5,497	5,765	1,413	—	1,413	7,178	+226
Total for England	130	354	11,493	11,847	3,724	46	3,770	15,617	— 44

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NUMBER of PERSONS Employed in and about IRON MINES, classified according to AGE, SEX, and COUNTY, during the Year 1899—*continued.*

County.	Number of Mines.	Under Ground.			Above Ground.			Total Above and Below Ground.	Comparison with preceding year.
		Males.			Males.	Females.	Total.		
		Ages 12 to 16.	Ages above 16.	Total.	Total.	Total.			
WALES:									
Flint	1	—	13	13	1	—	1	14	+ 9
SCOTLAND:									
Ayr	7	50	605	655	99	—	99	754	— 13
Edinburgh ...	1	2	23	25	6	—	6	31	— 14
Renfrew	2	15	368	383	91	—	91	474	+ 7
Total for Scotland	10	67	996	1,063	196	—	196	1,259	— 20
IRELAND									
Antrim	11	13	273	286	40	—	40	326	+ 19
Total for the United Kingdom	**152**	**434**	**12,775**	**13,209**	**3,961**	**46**	**4,007**	**17,216**	**— 36**

C.—OTHER MINES.

(*I.e.*, Mines producing neither coal nor iron ore.)

The mines which come under this heading are those which are worked for metallic ores other than iron, and for minerals commonly designated as "non-metallic," such as barytes, gypsum, limestone, oil-shale, rock-salt, sandstone, slate, &c.

No accurate separation of persons employed in working these different kinds of minerals is possible, two or more minerals being frequently worked together in the same mine. Only two counties, viz., Cornwall and Merionethshire, employ more than 5,000 persons at this class of mines. In the former county, the workers are engaged mainly at tin mines; in the latter, at slate mines.

The lead and zinc miners are distributed in Lanarkshire, Durham, Cumberland, Yorkshire, Shropshire, the Isle of Man, and various parts of Wales.

Oil-shale mining, carried on principally in the counties of Edinburgh and Linlithgow, is largely responsible for the number of persons shown in the table as employed at "other mines" in Scotland.

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TABLE 43.

PERSONS Employed at "OTHER MINES," classified according to COUNTRY, AGE, and SEX.

Country.	No. of Mines.	Under Ground.			Above Ground.			Total Above and Below Ground.	Comparison with preceding year.
		Males.			Males.	Females.	Total.		
		Ages, 12 to 16.	Ages, above 16.	Total.	Total.	Total.			
England	508	239	8,551	8,790	6,327	411	6,738	15,528	+ 859
Wales	174	11	4,917	4,928	4,970	37	5,007	9,935	+ 451
Scotland	63	226	4,111	4,337	1,007	2	1,009	5,346	+ 187
Ireland	15	—	165	165	135	11	146	311	+ 1
Isle of Man ...	9	1	391	392	233	—	233	625	+ 35
Total for 1899	**769**	**477**	**18,135**	**18,612**	**12,672**	**461**	**13,133**	**31,745**	**+1,533**
Total for preceding year.	733	439	17,253	17,692	12,011	509	12,520	30,212	+ 265

Each division of the United Kingdom shows an increase in the number of persons employed; this no doubt is due to the higher prices fetched by metallic ores.

TABLE 44.

COMPARISON of COUNTRIES as regards PROPORTION of PERSONS of different AGE and SEX Employed BELOW GROUND and ABOVE GROUND.

Country.	Under Ground.			Above Ground.			Total Above and Below Ground.
	Males.			Males	Females.	Total.	
	Ages, 12 to 16.	Ages above 16.	Total.	Total.	Total.		
England	Percentage. 1·5	Percentage. 55·1	Percentage. 56·6	Percentage. 40·8	Percentage. 2·6	Percentage. 43·4	100
Wales	0·1	49·5	49·6	50·0	0·4	50·4	100
Scotland	4·2	76·9	81·1	18·8	0·1	18·9	100
Ireland	—	53·1	53·1	43·4	3·5	46·9	100
Isle of Man... ...	0·2	62·5	62·7	37·3	—	37·3	100
Total for 1899	**1·5**	**57·1**	**58·6**	**39·9**	**1·5**	**41·4**	**100**
Total for preceding year.	1·4	57·1	58·5	39·8	1·7	41·5	100

By comparing this table with Tables 38 and 41, it will be seen that the proportion of the underground workers to the total number employed, which at coal mines is 80 per cent. and at iron mines 76·7, drops at "other mines" to 58·6. This, as pointed out in previous years, is due to the number of persons employed in "dressing" the metallic ores and slate.

The proportion of young persons (*i.e.*, under 16) employed below ground, which at coal mines is 6·2, falls at iron mines to 2·5, and at "other mines" to 1·5.

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TABLE 45.

NUMBER of PERSONS Employed in and about "OTHER MINES," classified according to AGE, SEX, and COUNTY, during the Year 1899.

County.	Number of Mines.	Under Ground.			Above Ground.			Total Above and Below Ground.	Comparison with preceding year.
		Males.			Males.	Females.	Total.		
		Ages 12 to 16.	Ages above 16.	Total.	Total.	Total.			
ENGLAND:									
Bedford	2	—	5	5	9	—	9	14	— 2
Berks	3	—	3	3	2	—	2	5	+ 1
Bucks	—	—	—	—	—	—	—	—	—
Chester	8	4	110	114	31	—	31	145	— 40
Cornwall	63	141	3,097	3,238	2,203	390	2,593	5,831	+638
Cumberland ...	21	2	531	533	374	—	374	907	+ 4
Derby	50	12	351	363	148	—	148	511	+ 13
Devon	17	5	386	391	482	15	497	888	— 5
Dorset	44	—	133	133	106	—	106	239	— 12
Durham	31	2	388	390	223	—	223	613	—147
Gloucester	9	—	31	31	20	—	20	51	+ 20
Hertford	3	—	5	5	1	—	1	6	=
Kent	3	1	5	6	12	—	12	18	— 1
Lancaster	27	8	372	380	524	1	525	905	+ 3
Leicester	9	—	96	96	31	—	31	127	+ 13
Northampton ...	6	—	20	20	29	—	29	49	— 6
Northumberland ...	6	—	269	269	130	—	130	399	=
Nottingham ...	8	5	145	150	105	—	105	255	+ 28
Oxford	2	—	3	3	1	—	1	4	+ 3
Salop	32	1	430	431	196	4	200	631	+ 92
Somerset	5	—	33	33	30	—	30	63	+ 6
Stafford	12	1	181	182	218	—	218	400	+122
Suffolk	1	—	5	5	—	—	—	5	— 93
Surrey	3	—	30	30	6	—	6	36	— 34
Sussex	4	—	39	39	62	—	62	101	+ 96
Warwick	3	—	28	28	6	—	6	34	+ 4
Westmorland ...	9	—	135	135	156	—	156	291	+ 3
Wilts	35	55	922	977	164	1	165	1,142	+137
Worcester	2	—	74	74	29	—	29	103	— 11
York	90	2	724	726	1,029	—	1,029	1,755	+ 27
Total for England	508	239	8,551	8,790	6,327	411	6,738	15,528	+859

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NUMBER of PERSONS Employed in and about "OTHER MINES," classified according to AGE, SEX, and COUNTY, during the Year 1899.—*continued.*

County.	Number of Mines.	Under Ground.			Above Ground.			Total Above and Below Ground.	Comparison with preceding year.
		Males.			Males.	Females.	Total.		
		Ages 12 to 16.	Ages above 16.	Total.	Total.	Total.			
WALES:									
Anglesey	3	—	104	104	153	16	169	273	+169
Brecon	5	—	54	54	14	—	14	68	− 8
Cardigan	18	—	328	328	291	13	304	632	+ 30
Carmarthen ...	2	—	76	76	40	7	47	123	− 21
Carnarvon	19	4	428	432	589	1	590	1,022	+367
Denbigh	10	—	375	375	414	—	414	789	+ 45
Flint	33	3	791	794	537	—	537	1,331	+ 98
Glamorgan	4	—	32	32	16	—	16	48	+ 11
Merioneth	66	4	2,599	2,603	2,754	—	2,754	5,357	−206
Montgomery ...	13	—	128	128	162	—	162	290	− 34
Radnor	1	—	2	2	—	—	—	2	=
Total for Wales...	174	11	4,917	4,928	4,970	37	5,007	9,935	+451
Isle of Man ...	9	1	391	392	233	—	233	625	+ 35
SCOTLAND:									
Ayr	2	—	14	14	10	2	12	26	+ 6
Dumbarton... ...	2	—	43	43	13	—	13	56	+ 10
Dumfries	2	—	120	120	110	—	110	230	− 16
Edinburgh	14	75	1,155	1,230	238	—	238	1,468	+ 5
Fife	7	2	123	125	49	—	49	174	+ 30
Kirkcudbright ...	—	—	—	—	—	—	—	—	− 6
Lanark	16	6	536	542	221	—	221	763	− 58
Linlithgow... ...	13	140	2,028	2,168	342	—	342	2,510	+180
Renfrew	4	3	74	77	11	—	11	88	+ 9
Stirling	3	—	18	18	13	—	13	31	+ 27
Total for Scotland	63	226	4,111	4,337	1,007	2	1,009	5,346	+187
IRELAND:									
Antrim	5	—	77	77	30	—	30	107	− 54
Cork	6	—	48	48	87	10	97	145	+ 37
Donegal	1	—	3	3	6	—	6	9	+ 9
Down	1	—	3	3	2	—	2	5	+ 1
Sligo	—	—	—	—	—	—	—	—	=
Wicklow	2	—	34	34	10	1	11	45	+ 8
Total for Ireland	15	—	165	165	135	11	146	311	+ 1
Total for the United Kingdom.	**769**	**477**	**18,135**	**18,612**	**12,672**	**461**	**13,133**	**31,745**	+1,533

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QUARRIES.

According to the returns received by the inspectors, 97,995 persons were employed during 1899 in and about the quarries of the United Kingdom which fall under the Quarries Act, 1894. Of the total 97,995 persons, 64,159, including 12 females, worked *inside* the actual pits, holes, or excavations; whilst 33,836, including 120 females, were employed at factories and workshops *outside*.

Compared with 1898 the number of persons employed inside quarries shows an increase of 1,407, and the number outside quarries a decrease of 37,890 persons; but it is important to point out that this decrease is apparent, not real. It is due to the transfer of the duty of inspecting the works for making bricks, tiles, Portland cement, &c., situated outside the quarries, from the Mines Branch of the Home Office to the Factory Branch.

The returns which have been received under the Quarries Act, 1894, since that Act came into force have given the following totals of persons employed *inside*:—1895, 53,915; 1896, 56,123; 1897, 58,845; 1898, 62,752; 1899, 64,159. The increase observable here is probably not wholly real; in part it is no doubt due to more complete notification by owners of quarries, as the Act has gradually become more widely known.

TABLE 46.

PERSONS Employed at QUARRIES under the QUARRIES ACT, classified according to AGE and SEX.

—	Number of Quarries at Work.	INSIDE THE QUARRIES, *i.e.*, inside the actual pits, holes, or excavations.							OUTSIDE THE QUARRIES, *i.e.*, outside the actual pits, holes, or excavations.							Total Number of Persons Employed Inside and Outside the Quarries.
		Males.			Females.			Total Inside.	Males.			Females.			Total Outside.	
		Ages 11 to 13.	Ages 13 to 18.	Ages above 18.	Ages 11 to 13.	Ages 13 to 18.	Ages above 18.		Ages 11 to 13.	Ages 13 to 18.	Ages above 18.	Ages 11 to 13.	Ages 13 to 18.	Ages above 18.		
Total for 1899	**6,994**	**16**	**2,326**	**61,305**	—	—	**12**	**64,159**	**32**	**3,907**	**29,777**	—	**30**	**90**	**33,836**	**97,995**
Total for preceding year	6,948	9	2,900	59,836	—	1	6	62,752	179	10,882	59,160	—	237	1,268	71,726	134,478

TABLE 47.

PERSONS Employed in and about QUARRIES, arranged according to MINERAL worked.

Kind of Mineral.	Number of Persons Employed.			
	Inside.	Outside.	Total.	Comparison with preceding year.
Chalk	2,632	982	3,614	— 6,793
Clay and brick earth	10,588	2,707	13,295	—29,154
Igneous rocks	11,839	6,516	18,355	+ 841
Iron ore	2,067	255	2,322	— 129
Limestone, other than chalk	14,381	5,104	19,485	— 323
Sandstone	14,110	11,089	25,199	+ 387
Slate	6,592	6,680	13,272	— 477
Other rocks and minerals	1,950	503	2,453	— 835
Total for 1899	**64,159**	**33,836**	**97,995**	— 36,483
Total for preceding year ...	62,752	71,726	134,478	+ 11,108

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The reason of the apparent decrease in the number of persons employed, as set forth in Table 47, is due to the transfer of certain factories and workshops, and especially brickworks, to the Factory Branch of the Home Office, as already explained.

TABLE 48.

NUMBER of PERSONS Employed at QUARRIES, classified according to AGE, SEX, and COUNTY, during the Year 1899.

County.	Inside.							Outside.							Total Inside and Outside.	Comparison with preceding year.
	Males.			Females.			Total.	Males.			Females.			Total.		
	Ages, 11 to 13.	Ages, 13 to 18.	Above 18.	Ages, 11 to 13.	Ages, 13 to 18.	Above 18.		Ages, 11 to 13.	Ages, 13 to 18.	Above 18.	Ages, 11 to 13.	Ages, 13 to 18.	Above 18.			
ENGLAND.																
Bedford	—	56	386	—	—	—	442	—	2	48	—	—	—	50	492	- 287
Berks	—	6	255	—	—	—	261	—	3	23	—	—	—	26	287	- 355
Bucks	—	2	53	—	—	—	55	—	—	21	—	—	—	21	76	- 32
Cambridge	—	4	269	—	—	—	273	—	4	52	—	—	—	56	329	- 462
Chester	—	28	564	—	..	—	592	—	25	187	—	—	—	212	804	+ 21
Cornwall	1	363	3,586	—	—	1	3,951	7	241	1,372	—	—	8	1,628	5,579	+ 84
Cumberland	—	44	820	—	—	—	864	—	26	295	—	—	—	321	1,185	- 7
Derby	1	151	2,724	—	—	—	2,876	9	182	1,017	—	—	—	1,208	4,084	- 1,123
Devon	—	28	1,507	—	—	—	1,535	—	60	567	—	—	—	627	2,162	- 526
Dorset	—	59	1,103	—	—	—	1,162	5	26	606	—	—	—	637	1,799	- 362
Durham	—	167	2,308	—	—	1	2,476	—	63	445	—	3	—	511	2,987	- 489
Essex	—	33	309	—	—	—	342	—	8	75	—	—	—	83	425	- 1,499
Gloucester	—	39	786	—	—	—	825	—	72	556	—	—	2	630	1,455	- 500
Hants and Isle of Wight.	—	23	297	—	—	—	320	—	9	51	—	—	—	60	380	- 124
Hereford..	—	—	55	—	—	—	55	—	—	1	—	—	—	1	56	- 46
Hertford	—	13	234	—	—	—	247	—	9	57	—	—	—	66	313	- 212
Huntingdon	—	3	362	—	—	—	365	—	3	37	—	—	—	40	405	- 1,322
Kent	—	76	1,680	—	—	—	1,756	—	120	540	—	—	—	660	2,416	- 6,125
Lancaster	1	107	3,586	—	—	—	3,694	—	211	2,100	—	—	7	2,318	6,012	- 2,696
Leicester	—	158	2,335	—	—	—	2,493	1	189	1,260	—	—	—	1,450	3,943	- 2,026
Lincoln	—	8	906	—	—	—	914	—	8	99	—	—	—	107	1,021	- 179
Middlesex	—	—	43	—	—	—	43	—	1	9	—	—	—	10	53	- 174
Monmouth	—	15	374	—	—	—	389	—	7	92	—	—	1	100	489	- 136
Norfolk	1	15	276	—	—	—	292	—	—	52	—	—	—	52	344	+ 46
Northampton	—	40	1,542	—	—	—	1,582	—	23	153	—	—	—	176	1,758	- 626
Northumberland ..	—	111	1,144	—	—	—	1,255	—	36	313	—	—	4	353	1,608	- 172
Nottingham	1	15	649	—	—	—	665	—	28	169	—	—	—	197	862	- 977
Oxford	—	8	130	—	—	—	138	—	2	40	—	—	—	42	180	- 27
Rutland	—	—	58	—	—	—	58	—	1	20	—	—	—	21	79	+ 7
Salop	—	27	551	—	—	—	578	1	115	616	—	—	—	732	1,310	- 224
Somerset	5	69	1,076	—	—	1	1,151	3	53	400	—	—	—	456	1,607	- 534
Stafford	—	113	1,999	—	—	1	2,113	—	107	587	—	3	28	725	2,838	- 5,370
Suffolk	—	11	233	—	—	—	244	—	3	35	—	—	—	38	282	- 122
Surrey	—	12	336	—	—	—	348	—	12	181	—	—	—	193	541	- 189
Sussex	—	15	425	—	—	—	440	—	5	79	—	—	—	84	524	- 346
Warwick	—	53	1,111	—	—	—	1,164	—	63	299	—	—	—	362	1,526	- 2,785
Westmoreland	—	5	263	—	—	—	268	—	5	255	—	—	—	260	528	- 44
Wilts	—	4	232	—	—	—	236	—	7	32	—	..	—	39	275	- 219
Worcester	—	18	561	—	—	—	579	—	7	104	—	—	—	111	690	- 1,086
York	1	171	4,263	—	—	—	4,435	2	438	4,320	—	1	8	4,769	9,204	- 2,418
Total	11	2,070	39,391	—	—	4	41,476	28	2,174	17,165	—	7	58	19,432	60,908	- 33,663

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NUMBER of PERSONS Employed at QUARRIES under the QUARRIES ACT, classified according to AGE, SEX, and COUNTY, during the Year 1899—*continued.*

County.	Inside.							Outside.							Total Inside and Outside.	Comparison with preceding year.
	Males.			Females.			Total.	Males			Females.			Total.		
	Ages, 11 to 13.	Ages, 13 to 18.	Above 18.	Ages, 11 to 13.	Ages, 13 to 18.	Above 18.		Ages, 11 to 13.	Ages, 13 to 18.	Above 18.	Ages, 11 to 13.	Ages, 13 to 18.	Above 18.			
WALES.																
Anglesey	—	8	194	—	—	—	202	—	3	71	—	—	—	74	276	+ 57
Brecon	—	19	359	—	—	—	378	—	7	69	—	—	2	78	456	- 74
Cardigan	—	—	42	—	—	—	42	—	—	8	—	—	—	8	50	- 6
Carmarthen	—	5	247	—	—	—	252	—	—	103	—	—	—	103	355	+ 72
Carnarvon	—	281	6,589	—	—	—	6,770	—	963	4,589	—	—	—	5,552	12,322	- 305
Denbigh	—	14	595	—	—	—	609	—	15	209	—	—	—	224	833	- 1,209
Flint	1	8	254	—	—	—	263	—	11	80	—	—	—	91	354	- 601
Glamorgan	1	42	1,499	—	—	8	1,550	—	8	303	—	—	—	311	1,861	- 10
Merioneth	—	4	345	—	—	—	349	—	14	197	—	—	—	211	460	- 30
Montgomery	—	4	103	—	—	—	107	—	9	67	—	—	—	76	183	+ 1
Pembroke	—	13	377	—	—	—	390	—	26	128	—	—	—	154	544	- 31
Radnor	—	6	262	—	—	—	268	—	9	96	—	—	—	105	373	+ 5
Total	2	354	10,716	—	—	8	11,080	—	1,065	5,920	—	—	2	6,987	18,067	- 2,326
SCOTLAND.																
Aberdeen	—	26	1,004	—	—	—	1,030	—	58	1,012	—	—	—	1,070	2,100	+ 57
Argyll	—	7	636	—	—	—	643	—	121	476	—	—	—	597	1,240	- 35
Ayr	—	2	379	—	—	—	381	—	40	255	—	—	—	295	676	- 18
Banff	—	—	109	—	—	—	109	—	—	28	—	—	—	28	137	- 1
Berwick	—	—	30	—	—	—	30	—	—	23	—	—	—	23	53	+ 4
Bute	—	—	50	—	—	—	50	—	—	57	—	—	—	57	107	+ 13
Caithness	—	3	375	—	—	—	378	—	—	100	—	—	—	100	478	+ 74
Clackmannan	—	—	44	—	—	—	44	—	4	37	—	—	—	41	85	- 5
Dumbarton	—	18	324	—	—	—	342	—	8	103	—	—	—	111	453	- 2
Dumfries	—	25	695	—	—	—	720	—	54	560	—	—	—	614	1,334	- 185
Edinburgh	—	8	658	—	—	—	666	—	11	139	—	—	6	156	822	+ 28
Elgin	—	—	108	—	—	—	108	—	5	56	—	—	—	61	169	- 23
Fife	—	29	663	—	—	—	692	—	14	205	—	—	—	219	911	- 24
Forfar	—	12	360	—	—	—	372	—	45	558	—	—	—	603	975	+ 29
Haddington	—	—	113	—	—	—	113	—	2	14	—	—	—	16	129	- 43
Inverness	—	—	5	—	—	—	5	—	—	—	—	—	—	—	5	- 50
Kincardine	—	—	65	—	—	—	65	—	—	56	—	—	—	56	121	+ 17
Kinross	—	1	28	—	—	—	29	—	1	9	—	—	—	10	39	- 6
Kirkcudbright	—	38	309	—	—	—	347	—	26	243	—	—	—	269	616	- 22
Lanark	—	40	939	—	—	—	979	1	48	606	—	23	14	692	1,671	- 78
Linlithgow	—	2	196	—	—	—	198	—	32	215	—	—	—	247	445	- 13
Nairn	—	—	23	—	—	—	23	—	—	18	—	—	—	18	41	—
Orkney	—	—	3	—	—	—	3	—	—	—	—	—	—	—	3	- 2
Peebles	—	—	18	—	—	—	18	—	1	2	—	—	—	3	21	- 8
Perth	—	5	365	—	—	—	370	—	9	180	—	—	—	189	559	- 3
Renfrew	—	18	439	—	—	—	457	—	1	23	—	—	—	24	481	+ 55
Ross and Cromarty ..	—	—	35	—	—	—	35	—	—	14	—	—	—	14	49	- 13
Roxburgh	—	—	43	—	—	—	43	—	—	5	—	—	—	5	48	+ 14
Selkirk	—	—	5	—	—	—	5	—	—	2	—	—	—	2	7	+ 1
Shetland	—	—	6	—	—	—	6	—	—	—	—	—	—	—	6	+ 2
Stirling	—	35	281	—	—	—	316	—	11	151	—	—	7	169	485	+ 10
Sutherland	—	—	19	—	—	—	19	—	—	14	—	—	—	14	33	+ 15
Wigtown	—	—	9	—	—	—	9	—	—	—	—	—	—	—	9	+ 4
Total	—	269	8,336	—	—	—	8,605	1	491	5,161	—	23	27	5,703	14,308	- 362

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NUMBER of PERSONS Employed at QUARRIES under the QUARRIES ACT, classified according to AGE, SEX, and COUNTY, during the Year 1899—*continued.*

County.	Inside.							Outside.							Total Inside and Outside.	Comparison with preceding year.
	Males.			Females.			Total.	Males.			Females.			Total.		
	Ages. 11 to 13.	Ages. 13 to 18.	Above 18.	Ages. 11 to 13.	Ages. 13 to 18.	Above 18.		Ages. 11 to 13.	Ages. 13 to 18.	Above 18.	Ages. 11 to 13.	Ages. 13 to 18.	Above 18.			
IRELAND.																
Antrim	—	40	470	—	—	—	510	—	41	252	—	—	—	293	803	- 205
Armagh	—	1	60	—	—	—	61	—	4	72	—	—	—	76	137	- 22
Carlow	—	1	22	—	—	—	23	—	—	13	—	—	—	13	36	+ 1
Cavan	—	—	2	—	—	—	2	—	—	8	—	—	—	8	10	+ 10
Clare	—	3	58	—	—	—	61	—	13	80	—	—	—	93	154	- 30
Cork	—	15	192	—	—	—	207	—	4	58	—	—	—	62	269	- 32
Donegal	—	—	66	—	—	—	66	—	3	44	—	—	—	47	113	+ 4
Down	—	16	327	—	—	—	343	—	55	352	—	—	—	407	750	+ 286
Dublin	—	12	278	—	—	—	290	—	7	63	—	—	—	70	360	- 130
Fermanagh	—	2	21	—	—	—	23	—	—	6	—	—	—	6	29	+ 2
Galway	—	1	23	—	—	—	24	—	1	4	—	—	—	5	29	+ 2
Kerry	—	—	60	—	—	—	60	—	—	20	—	—	—	20	80	+ 12
Kildare	—	—	14	—	—	—	14	—	—	1	—	—	—	1	15	- 2
Kilkenny	—	1	62	—	—	—	63	—	8	42	—	—	—	50	113	- 1
King's County	—	—	20	—	—	—	20	—	1	18	—	—	—	19	39	- 3
Leitrim	—	—	5	—	—	—	5	—	—	—	—	—	—	—	5	- 1
Limerick	—	3	99	—	—	—	102	—	3	27	—	—	—	30	132	- 25
Londonderry	—	—	72	—	—	—	72	1	2	22	—	—	—	25	97	- 25
Longford	—	—	20	—	—	—	20	—	—	4	—	—	—	4	24	+ 3
Louth	—	—	54	—	—	—	54	—	—	9	—	—	—	9	63	- 13
Mayo	—	—	7	—	—	—	7	—	—	—	—	—	—	—	7	+ 5
Meath	—	4	82	—	—	—	86	—	—	25	—	—	—	25	111	+ 12
Monaghan	—	3	42	—	—	—	45	—	2	10	—	—	—	12	57	=
Queen's County ..	—	—	52	—	—	—	52	—	—	8	—	—	—	8	60	+ 17
Roscommon	—	—	4	—	—	—	4	—	—	3	—	—	—	3	7	=
Sligo	—	—	23	—	—	—	23	—	—	—	—	—	—	—	23	+ 4
Tipperary	—	—	172	—	—	—	172	—	18	147	—	—	—	165	337	=
Tyrone	—	1	126	—	—	—	127	—	6	75	—	—	—	81	208	+ 42
Waterford	—	4	26	—	—	—	30	—	3	3	—	—	—	6	36	- 39
Westmeath	—	—	1	—	—	—	1	—	—	—	—	—	—	—	1	- 2
Wexford	—	1	32	—	—	—	33	—	—	17	—	—	—	17	50	- 59
Wicklow	3	20	253	—	—	—	276	2	5	70	—	—	—	77	353	+ 36
Total	3	128	2,745	—	—	—	2,876	3	176	1,453	—	—	—	1,632	4,508	- 145
ISLE OF MAN	—	5	117	—	—	—	122	—	1	78	—	—	3	82	204	+ 65
TOTAL for the UNITED KINGDOM.	**16**	**2,826**	**61,305**	—	—	**12**	**64,159**	**32**	**3,997**	**29,777**	—	**30**	**90**	**33,836**	**97,995**	**- 56,483**

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SECTION 2.

Accidents.

In 1899, 1,032 separate fatal accidents occurred in and about the mines and quarries of the United Kingdom, causing the loss of 1,089 lives. Compared with the previous year, there is an increase of 42 in the number of fatal accidents and an increase of 14 in the number of lives lost.

Of the 1,032 separate fatal accidents, 915 causing the loss of 972 lives happened at mines, and 117 causing the loss of 117 lives happened at quarries.

MINES.

At mines there is, as compared with the previous year, an increase of 56 in the number of fatal accidents and an increase of 31 in the number of deaths.

The worst accident during the year was an explosion of fire-damp and coal-dust at Llest Colliery in Glamorganshire, which caused the loss of 19 lives.* With the exception of this disaster and the loss of 6 lives, by an explosion of fire-damp at Brandon Colliery, Durham, no fatality claimed more than 4 victims (Table 50).

The comparative Tables published in Part I., pages 35 to 43, afford the means of comparing 1899, in regard to the number of accidents and deaths, with each year since 1872, the year in which two important Mines Regulation Acts were passed.

In the first place, looking only at the actual number of deaths caused by accidents at mines, it will be seen that the figure for 1899, 972, is, with the exception of that of the previous year, the lowest number of deaths recorded since 1872.

The actual number of deaths, however, does not by itself afford a complete test of the comparative safety or danger of the mining industry in 1899. True comparisons can only be made by taking into account the number of persons employed and the quantity of mineral obtained. The results of the comparisons are given in Tables 31 and 32 (Part I.) in which the death-rates have been calculated per thousand persons employed and per million tons of mineral raised.

Taking first the death-rate per 1,000 persons employed, it will be seen that in mines under the Coal Mines Act, the death-rate in 1899 was 1·26, the lowest hitherto recorded, as compared with 1·81 the average of the 10 years 1883–1892. The improvement which commenced in 1895, after a rise in 1893 and 1894, has continued steadily down to the present time. At mines under the Metalliferous Mines Act, the death-rate 1·59 was considerably higher than in 1898, and indeed was above the average of the 10 years 1883–1892. At these mines, however, where the numbers employed are comparatively small and accidents few, a slight increase in the number of deaths will cause considerable variation in the death-rate, so that no special importance can be attached to the higher figure for 1899.

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* *Reports to Her Majesty's Secretary of State for the Home Department on the circumstances attending an explosion which occurred at the Llest Colliery, Pontyrhyl, on the 18th August*, 1899, by Chester Jones, Barrister-at-Law, and J. T. Robson, one of Her Majesty's Inspectors of Mines. [Cd. 17.] London, 1899. *Price* 4*d*.

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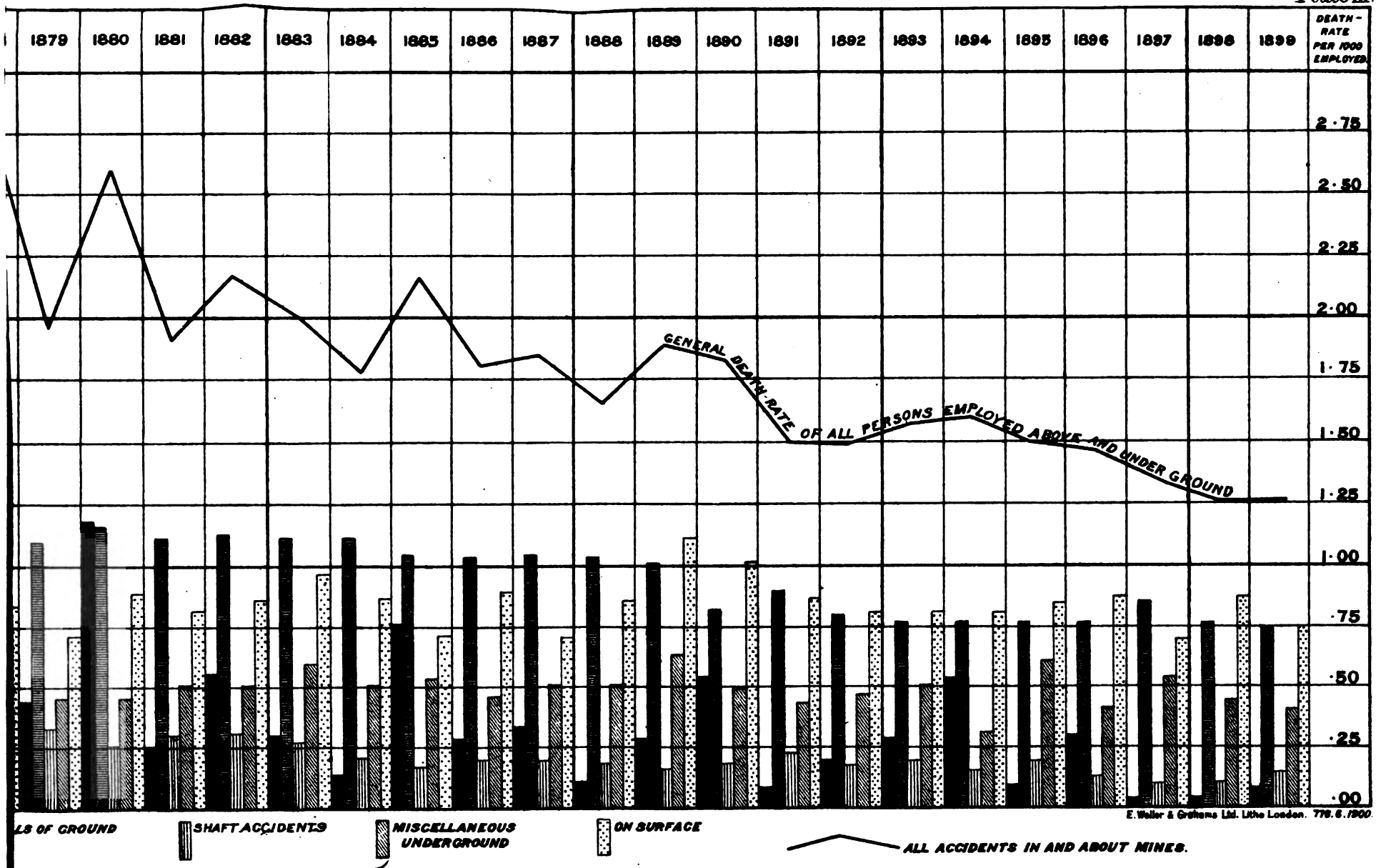
VARIOUS CAUSES OF ACCIDENTS IN AND ABOUT ALL MINES, FROM 1873 TO 1899.

Plate III.



NDERGROUND.

round workers are calculated upon the Number of Persons employed Underground
e " " " " " " " " " Aboveground
} See Table 49.

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For all mines together, the death-rates since 1891 are as follows :—

Table 49.

Death-rate from Accidents in and about all the Mines per 1,000 Persons Employed from 1891 to 1899.*

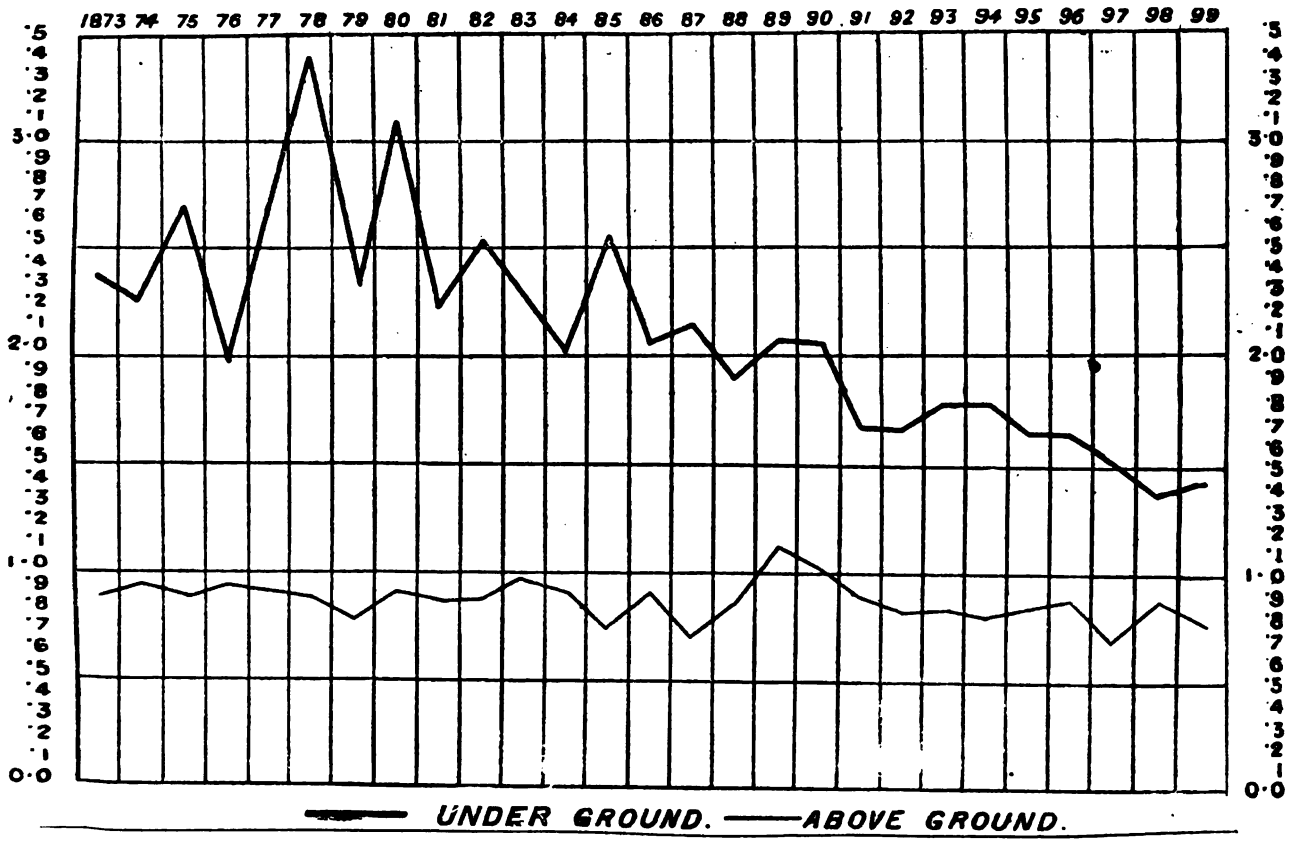
Year.	Death-rate from Accidents per 1,000 Persons.						
	Underground workers taken separately.					Surface Workers taken separately.	General Death-rate of all persons employed both Above and Under Ground.
	Explosions of Firedamp or Coal-dust.	Falls of Ground.	Shaft Accidents.	Miscellaneous.	All Causes Underground.		
1891	·091	·894	·236	·438	1·660	·864	1·493
1892	·215	·794	·180	·469	1·658	·800	1·480
1893	·280	·762	·201	·511	1·755	·801	1·565
1894	·538	·775	·158	·319	1·789	·790	1·587
1895	·094	·765	·188	·613	1·660	·844	1·494
1896	·300	·762	·137	·423	1·622	·870	1·467
1897	·033	·847	·102	·531	1·513	·691	1·343
1898	·046	·768	·112	·446	1·372	·878	1·270
1899	·089	·755	·138	·427	1·410	·754	1·272

The improvement in the death-rate from accidents at mines is illustrated by the accompanying diagram, Plate III. Even the casual observer will be struck by the fact that the risk of explosions of firedamp or coal dust is diminishing rapidly.

Figure 1 illustrates the death-rates among the underground workers and the surface workers taken separately.

Fig. 1.

Accident Death-rates per 1,000 Persons Employed Below and Above Ground respectively at all Mines.



* The figures for each separate year from 1851 to 1890 are given in Appendix 2 of the "First Annual General Report."

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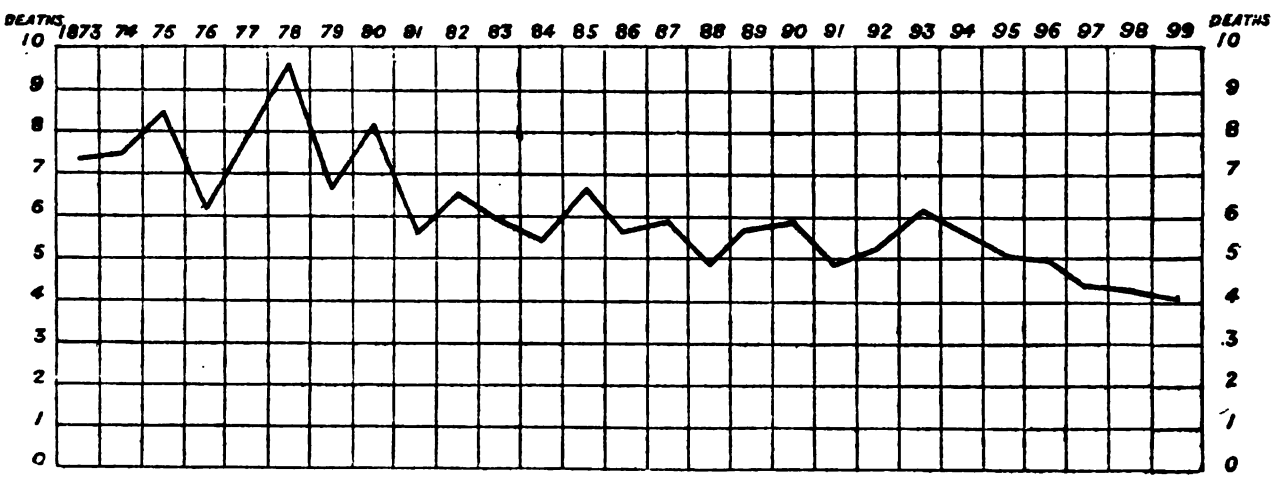
The death-rate per 1,000 persons employed is not the only test by which the safety or danger of the industry may be gauged in the case of the mines under the Coal Mines Act. We may compare the quantity of mineral raised with the number of persons killed by accidents. In 1873 there were 7 persons killed per 1,000,000 tons of mineral (mainly coal) raised from the mines; in 1899, only 4 lives were lost for a like quantity. The gain in safety reckoned in this manner is satisfactory, and the curve in Fig. 2 shows the improvement to be fairly steady.

FIG. 2.

DEATHS per 1,000,000 TONS of MINERAL RAISED.



The next tables show the accidents subdivided according to their gravity, the kind of mineral worked, the age and sex of the persons killed, and the cause.

TABLE 50.

NUMBER of DEATHS caused by each ACCIDENT.

1898.				1899.			
Number of Separate Accidents.	Number of Deaths per Accident.	Total Number of Deaths.	Percentage of Total Number of Deaths.	Number of Separate Accidents.	Number of Deaths per Accident.	Total Number of Deaths.	Percentage of Total Number of Deaths.
827	1	827	87·89	888	1	888	91·36
21	2	42	4·46	19	2	38	3·91
6	3	18	1·91	3	3	9	·93
3	4	12	1·28	3	4	12	1·23
1	7	7	·74	1	6	6	·62
1	35	35	3·72	1	19	19	1·95
859	—	941	100·00	915	—	972	100·00

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TABLE 51.

FATAL ACCIDENTS, classified according to the MINERAL worked.

Year.	Coal Mines.*			Iron Mines.*			Other Mines.*			All the Mines in the United Kingdom.	
	Number of Separate Fatal Accidents.	Number of Deaths.	Percentage of the Total Number of Deaths.	Number of Separate Fatal Accidents.	Number of Deaths.	Percentage of the Total Number of Deaths.	Number of Separate Fatal Accidents.	Number of Deaths.	Percentage of the Total Number of Deaths.	Total Number of Separate Fatal Accidents.	Total Number of Deaths.
1899	**838**	**886**	**91·2**	**39**	**43**	**4·4**	**38**	**43**	**4·4**	**915**	**972**
1898	807	887	94·2	18	18	1·9	34	36	3·8	859	941

TABLE 52.

NUMBER of DEATHS by ACCIDENTS, arranged according to AGE and SEX of the PERSONS killed.

Ages.	Coal Mines.*					Iron Mines.*					Other Mines.*					All Mines.				
	Under-ground.	Above-ground.			Total.	Under-ground.	Above-ground.			Total.	Under-ground.	Above-ground.			Total.	Under-ground.	Above-ground.			Total.
		Males.	Females.	Total.			Males.	Females.	Total.			Males.	Females.	Total.			Males.	Females.	Total.	
Under 16 ..	72	12	—	12	84	—	1	—	1	1	2	—	—	—	2	74	13	—	13	87
16–20	63	16	1	17	80	7	—	—	—	7	2	1	—	1	3	72	17	1	18	90
20–30	197	20	—	20	217	5	—	—	—	5	10	2	—	2	12	212	22	—	22	234
30–60	398	46	—	46	444	26	1	—	1	27	19	2	—	2	21	443	49	—	49	492
Over 60	41	18	—	18	59	3	—	—	—	3	4	1	—	1	5	48	19	—	19	67
Ages not stated	2	—	—	—	2	—	—	—	—	—	—	—	—	—	—	2	—	—	—	2
Total for 1899	**773**	**112**	**1**	**113**	**886**	**41**	**2**	**—**	**2**	**43**	**37**	**6**	**—**	**6**	**43**	**851**	**120**	**1**	**121**	**972**
Total for preceding year.	759	122	6	128	887	16	2	—	2	18	31	5	—	5	36	806	129	6	135	941

It will be seen from this table that of the 773 deaths from accidents underground at coal mines, 84, or 10·87 per cent., were deaths of persons under 16. The proportion of persons under 16 to the total number employed underground was 7·75. The corresponding figures for 1898 were, percentage of deaths from accidents 7·77, percentage employed 7·68.

In 1899, therefore, the children suffered more than the adults, though in the previous year there was no disproportionate number of accidents among them.

* *See* page 51.

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TABLE 53.

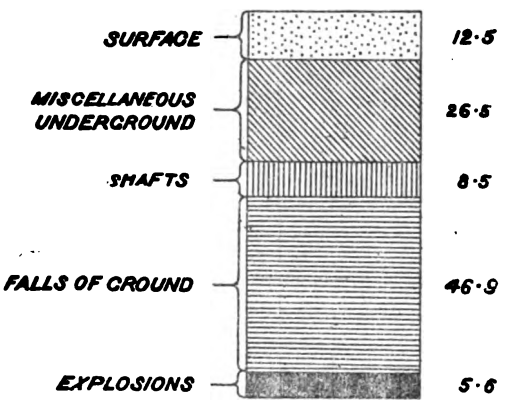
FATAL ACCIDENTS and DEATHS, arranged according to PLACE or CAUSE.

Place or Cause of the Accident.	Fatal Accidents.				Comparison with Previous Year.	
	Number of Separate Accidents.	Percentage of Total Number of Accidents.	Deaths from the Accidents.	Percentage of Total Number of Deaths.	Separate Accidents.	Deaths.
I.—Underground Accidents:						
1. Explosions of fire-damp or coal dust.	23	2·5	54	5·6	+ 11	+ 27
2. Falls of ground... ...	443	48·4	456	46·9	+ 8	+ 5
3. Shaft accidents... ...	81	8·9	83	8·5	+ 20	+ 17
4. Miscellaneous	247	27·0	258	26·5	+ 25	— 4
II.—Surface accidents	121	13·2	121	12·5	— 8	— 14
Total	**915**	**100·0**	**972**	**100·0**	**+ 56**	**+ 31**

These results are expressed graphically in the following diagram :—

FIG. 3.

PROPORTION of DEATHS FROM DIFFERENT CAUSES of ACCIDENTS.



The different classes of accidents will now be considered separately.

1.—EXPLOSIONS OF FIRE-DAMP OR COAL DUST.

The year 1899, with 23 fatal accidents and 54 deaths, was far less favourable than 1898, when there were only 12 fatal accidents and 27 deaths. The great increase in the number of deaths is due to the fatal explosion at Llest Colliery in South Wales, where 19 persons lost their lives.

In the two following tables the accidents are classified according to the number of deaths, and according to the kind of mine and cause.

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TABLE 54.

EXPLOSIONS of FIRE-DAMP, with or without COAL DUST, classified according to the NUMBER of PERSONS killed by each.

1898.			1899.		
Number of Separate Accidents.	Number of Deaths per Accident.	Total Number of Deaths.	Number of Separate Accidents.	Number of Deaths per Accident.	Total Number of Deaths.
6	1	6	15	1	15
2	2	4	5	2	10
2	3	6	1	4	4
1	4	4	1	6	6
1	7	7	1	19	19
12	—	27	23	—	54

TABLE 55.

EXPLOSIONS of FIRE-DAMP or COAL DUST, classified according to Kind of MINE and CAUSE.

CAUSE.	Coal Mines.				Iron Mines.				Other Mines.				Total for all Mines.			
	No. of Fatal Accidents.	No. of Deaths.	No. of Non-fatal Accidents.	No. of Persons injured.*	No. of Fatal Accidents.	No. of Deaths.	No. of Non-fatal Accidents.	No. of Persons injured.*	No. of Fatal Accidents.	No. of Deaths.	No. of Non-fatal Accidents.	No. of Persons injured.*	No. of Fatal Accidents.	No. of Deaths.	No. of Non-fatal Accidents.	No. of Persons injured.*
I. Lighting .. Safety-lamps. 1. Naked lights ..	11	34	95	130	—	—	6	10	2	2	15	25	13	36	116	165
2. Matches or smoking.	2	2	—	1	—	—	—	—	—	—	—	—	2	2	—	1
3. Illegally opened	—	—	1	1	—	—	—	—	—	—	—	—	—	—	1	1
4. In defective condition.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
5. Injured during work.	2	3	1	2	—	—	—	—	—	—	—	—	2	3	1	2
6. Gauze becoming red hot.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7. Oil or soot on gauze taking fire.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8. Flame driven through gauze by ventilating current.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9. Flame driven through gauze by improper handling.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
II. Shot-firing .. 10. Flame used for igniting fuse.	1	2	—	—	—	—	—	—	—	—	—	—	1	2	—	—
11. Flame or sparks from fuse or igniter.	1	1	1	3	—	—	—	—	—	—	—	—	1	1	1	3
12. Flame of explosive.	2	7	4	17	—	—	—	—	—	—	—	—	2	7	4	17
13. Precise cause unknown.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
III. Underground fires. 14. Ventilating furnaces.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
15. Accidental or spontaneous ignition of mineral, timber, or other material.	1	2	—	2	—	—	—	—	—	—	—	—	1	2	—	2
IV. Miscellaneous or unknown	1	1	1	3	—	—	—	—	—	—	—	—	1	1		3
Total in 1899	**21**	**52**	**103**	**159**	—	—	**6**	**10**	**2**	**2**	**15**	**25**	**23**	**54**	**124**	**194**
Total in Preceding Year	12	27	139	209	—	—	3	5	—	—	9	10	12	27	151	224

* Including persons injured by explosions which proved fatal to others.

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Naked lights were once more the principal cause of the accidents, whether fatal or non-fatal; to them were due two-thirds of the total number of deaths, including the 19 at Llest Colliery.* In returning their verdict at the inquest upon the victims of this explosion, the jury came to the conclusion that it was an error on the part of the management to have worked this colliery without safety lamps, the existence of gas being well known, as several men had been burnt by ignitions of gas in two previous years.

Four fatal accidents and ten deaths are ascribed to shot-firing. At Brandon Colliery (*District No.* 4), six men were killed and four were injured by an explosion of gas, which was ignited by the flame of damp gunpowder issuing from the pricker-hole, the charge not having done its work or even blown out the stemming.

A slight mishap at Point of Ayr Colliery (*District No.* 7), viz., the fracture of the glass of a safety-lamp by an iron wedge, had serious consequences. The surrounding atmosphere at the time was charged with gas, and at once exploded, setting fire to the canvas brattice used to direct the ventilating current. Some two hours later, while the manager and under-manager were endeavouring to extinguish the fire, a second explosion took place and killed them both. Mr. Hall adds in his remarks, "an exploring party, headed by Mr. Matthews, the Assistant Inspector of Mines, had a narrow escape, several of the party being knocked down by the force of the explosion."

TABLE 56.

EXPLOSIONS of FIRE-DAMP caused by NAKED LIGHTS at MINES under the COAL MINES REGULATION ACT.

Country.	No. of fatal Accidents.	No. of Deaths.	No. of Non-Fatal Accidents.	No. of Persons Injured.	No. of Persons Employed Below Ground at Mines under the Coal Mines Regulation Act.	Tons of Mineral† Produced at Mines under the Coal Mines Regulation Act.
Scotland	9	11	57	85	78,696	35,109,393
Wales and Monmouthshire ...	2	20	27	33	121,785	43,368,640
Total for Wales and Monmouthshire, and Scotland.	11	31	84	118	200,481	78,478,033
England (excluding Monmouthshire) and Ireland.‡	2	5	32	47	382,528	154,841,051
Total for the United Kingdom	**13**	**36**	**116**	**165**	**583,009**	**233,319,084**

† Mainly coal. ‡ The amount of coal mining in Ireland is too small to affect the argument.

This table confirms the fact, pointed out in previous years, that Scotland and Wales have a number of accidents from naked lights out of all proportion to their output and mining population. The remedy which naturally suggests itself to cure this evil is some stricter rule for enforcing the introduction of safety-lamps.

* *Reports to Her Majesty's Secretary of State for the Home Department on the circumstances attending an explosion which occurred at the Llest Colliery, Pontyrhyl, on the 18th August*, 1899. By Chester Jones, Barrister-at-Law, and J. T. Robson, one of Her Majesty's Inspectors of Mines. [Cd.—17], London, 1899. *Price 4d.*

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2.—FALLS OF GROUND.

During 1899, 456 persons were killed by falls of ground.

The following tables give interesting figures relating to these accidents :—

TABLE 57.

FALLS of GROUND, classified according to the NUMBER of PERSONS killed in each ACCIDENT.

1898.			1899.		
No. of Separate Accidents from Falls of Roof or Side.	No. of Deaths per Accident.	Total No. of Deaths.	No. of Separate Accidents. from Falls of Roof or Side.	No. of Deaths per Accident.	Total No. of Deaths.
421	1	421	432	1	432
12	2	24	9	2	18
2	3	6	2	3	6
435	—	451	443	—	456

TABLE 58.

FALLS of GROUND, classified according to Place of Occurrence.

Place where the Fall occurred.	No. of Fatal Accidents.	No. of Deaths.
At the working face	318	323
On roads while repairing or enlarging	75	79
On roads while otherwise working or passing	50	54
Total from falls underground ...	443	456

Comparing the number of fatal accidents and deaths from falls with the total number of fatal accidents and deaths at mines, it will be seen that falls are responsible for 48·4 per cent. of the total number of accidents and 46·9 per cent. of the total number of deaths.

If compared only with fatal accidents and deaths *underground*, the percentages are 55·8 of the accidents and 53·6 of the deaths.

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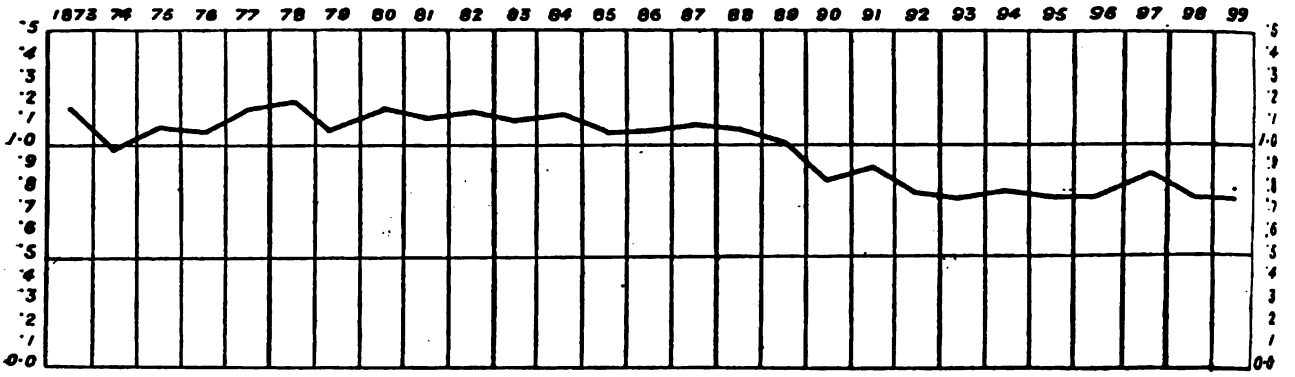
FIG. 4.

DEATH-RATES from FALLS of GROUND per 1,000 PERSONS EMPLOYED BELOW GROUND.



The actual number of deaths from falls of ground is practically stationary, but as the number of persons employed underground increases every year, the death-rate per 1,000 employed is diminishing, and consequently there is an improvement. However, the progress as shown by Fig. 4 is very slow.

It will be seen from Table 58 that 70 per cent. of the accidents happen at the working face, so it is easy to point out *where* the remedy is most needed; but it is another matter to say *what* the remedy should be.

You were pleased last August to call the attention of the mine owners of the Kingdom to this subject and you pointed out in your circular* that the Inspectors of Mines recommended the following precautionary measures:—

(i.) Supply of timber to be kept ready for use at each working place.

(ii.) Increased supervision by the mine officials and stricter enforcement of rules and instructions.

(iii.) Use of an appliance such as the "ringer and chain" for "drawing" timber.

(iv.) Systematic timbering and spragging. In other words, the manager should specify for every seam, or district of a seam under his control, the *maximum* distance apart at which the props, sprags, and other supports may be fixed in the working place.

Mr. Hall reports that 50 per cent. of the collieries in his district (*No.* 7) are now practising systematic timbering.

Persons may ask: Are there any other remedies for these accidents? In the corresponding report for 1896† I referred to the Commission which had been appointed by the German Government to discuss and report upon accidents from falls of ground. Up to the present time no report has been issued, and while awaiting what is sure to prove a document of great importance to the mining world, I should like to call attention to the methods of preventing falls of roof which are now being displayed by the "Compagnie des Mines de Houille de Courrières" at the Paris Exhibition. From the point of view of an inspector of mines, whose business it is to prevent mine accidents and who knows that the "fall of ground" is by far the deadliest enemy of the miner, I have no hesitation in designating the Courrières exhibit as the most important thing which I saw at Paris.

The "Compagnie des Mines de Houille de Courrières" is a company working collieries near the town of Lens in the Department of the Pas de Calais, and employing 6,998 persons, of whom 5,794 work below ground. It possesses 44 seams of coal, with a total thickness of 153 feet (46 m. 60). The average thicknesses of the seams of the three kinds of coal worked are respectively: 2 feet 8¼ inches (82 cm.), 2 feet 10¼ inches (87 cm.), and 3 feet 7¼ inches (1m. 10). The annual output is now about 2 million tons. The undertaking is therefore sufficiently extensive to furnish average data of real importance.

* Appendix I., page 105.

† *Third Annual General Report upon the Mineral Industry for the year* 1896 (C.-8705) 1897, *p.* 32.

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The precautionary measures adopted at Courrières consist (1) in systematic timbering, and (2) in supplying each worker at the face with three iron bars, $1\frac{3}{8}$ inches square and 4 feet 3 inches long, and compelling him to make use of these bars to form a sort of temporary shield in advance of the last row of timber props. When another row of props has been put in, the bars are withdrawn and then driven on in advance beyond the new set of supports. They are placed about 15 to 20 inches apart and fixed securely by wedges. As the work proceeds, the temporary protecting shield must be pushed on ; the men are now so practised that it takes them very few minutes to knock out the wedges, drive the bars forward, and wedge them up again. About 6,000 bars are in daily use at the Courrières Collieries. If they get bent, which not infrequently happens, they can easily be straightened by the smith ; on the other hand they rarely break, because if a great amount of bending indicates an unusual pressure of the roof, additional timber props are put in. Consequently the consumption of iron bars is trifling.

Plates IV., V., VI., VII. and VIII. will explain the Courrières methods, which are simple and effective. I have to thank M. Paul Schneider, the Vice-President of the Company, and M. Auguste Lavaurs, the Director, not only for the drawings from which these plates have been copied, but also for sundry facts and figures concerning their collieries.

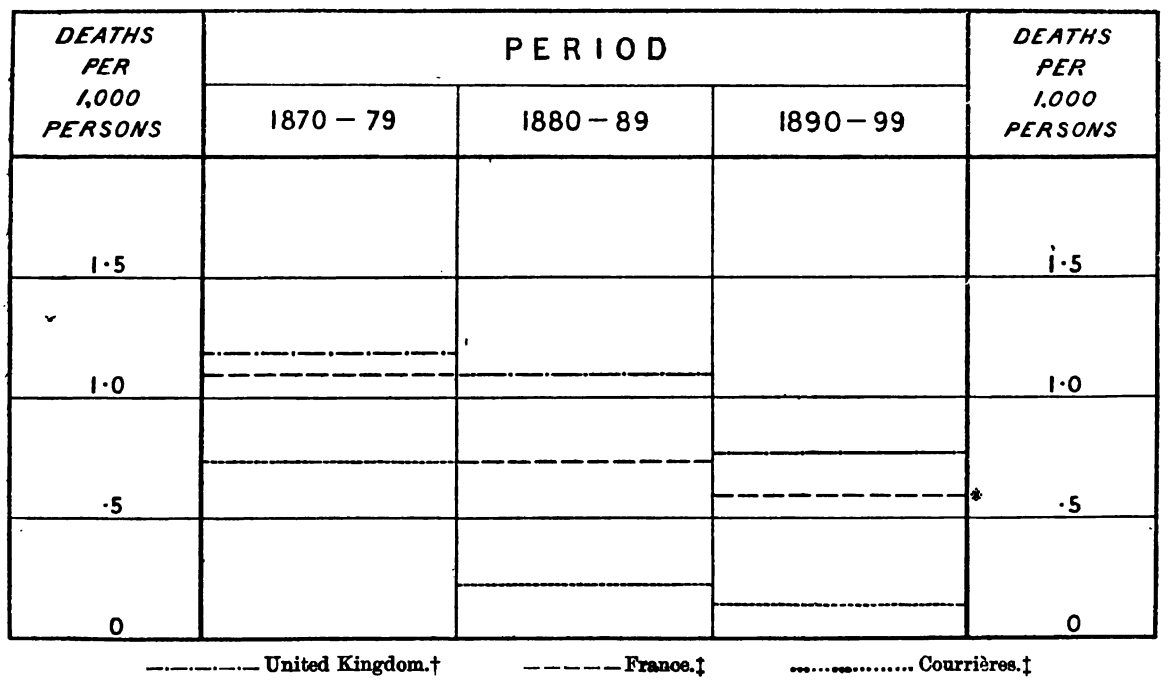
The two standards by which the efficacy of the Courrières methods may be gauged, are the mortality rates from falls (1) per 1,000 persons employed underground, and (2) per 1,000,000 tons of mineral extracted. The comparisons of the Courrières death-rates with those of France and England are shown numerically by Tables 59 and 60, and diagrammatically by Figures 5 and 6.

TABLE 59.

AVERAGE DEATH-RATES from FALLS of GROUND per 1,000 PERSONS employed UNDERGROUND.

Country or Mine.	Period.		
	1870–1879.	1880–1889.	1890–1899.
United Kingdom†	1·19	1·10	0·79
France‡	1·10	0·76	0·59*
Courrières‡	0·76	0·24	0·15

FIG. 5.



* Period 1890–1898.
† Mines under the Coal Mines Regulation Act.
‡ Figures taken from a diagram prepared by the Courrières Company for Paris Exhibition.

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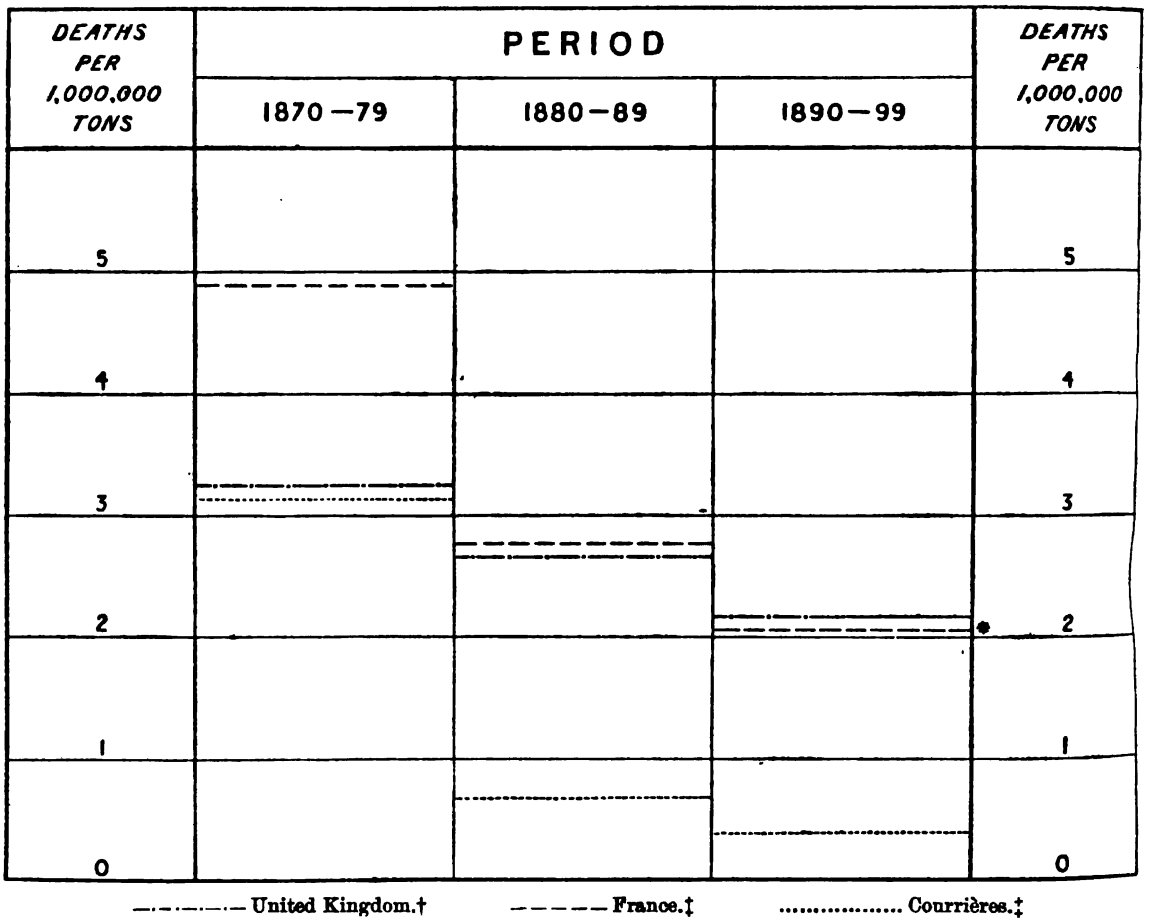
TABLE 60.

AVERAGE DEATH-RATE from FALLS of GROUND per 1,000,000 TONS of MINERAL raised.

Country or Mine.	Period.		
	1870–1879.	1880–1889.	1890–1899.
United Kingdom†	3·24	2·66	2·16
France‡	4·90	2·75	2·04*
Courrières‡	3·13	0·70	0·39

FIG. 6.



The remarkable fact set forth above is the reduction in the death-rate from falls to the extraordinarily low figures of 0·15 per 1,000 persons employed and 0·39 per million tons of mineral raised. These are not figures for one lucky year, but are averages for a period sufficiently long to warrant the assertion that they are not due to chance. Judged by either standard, the mortality in this country from falls of ground is five times as great.

The next point is to determine what share in the splendid improvement at Courrières belongs to each of the two separate remedies.

I learn from M. Lavaurs that systematic timbering with increased supervision was introduced in 1880, and that after trials in 1889 the use of the iron bars was made obligatory in 1890. It appears, therefore, that systematic timbering strictly enforced reduced the death-rate per 1,000 persons to one-third in the ten years 1880–1889, and that the employment of iron bars has now brought it down to one-fifth of what it was in the decade 1870–1879. The Courrières authorities consider that their present freedom from accidents by falls is largely due to this latter preventive measure.

The brilliant results at Courrières afford ample proof of the value of two of the precautions recommended in the Home Office Circular,‖ and warrant the prediction that the

* Period 1890–1898.
† Mines under the Coal Mines Regulation Acts.
‡ Figures taken from a diagram prepared by the Courrières Company for the Paris Exhibition.
‖ Nos. ii and iv, page 74.

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COURRIÈRES COLLIERIES.

USE OF IRON BARS AS TEMPORARY SUPPORTS.

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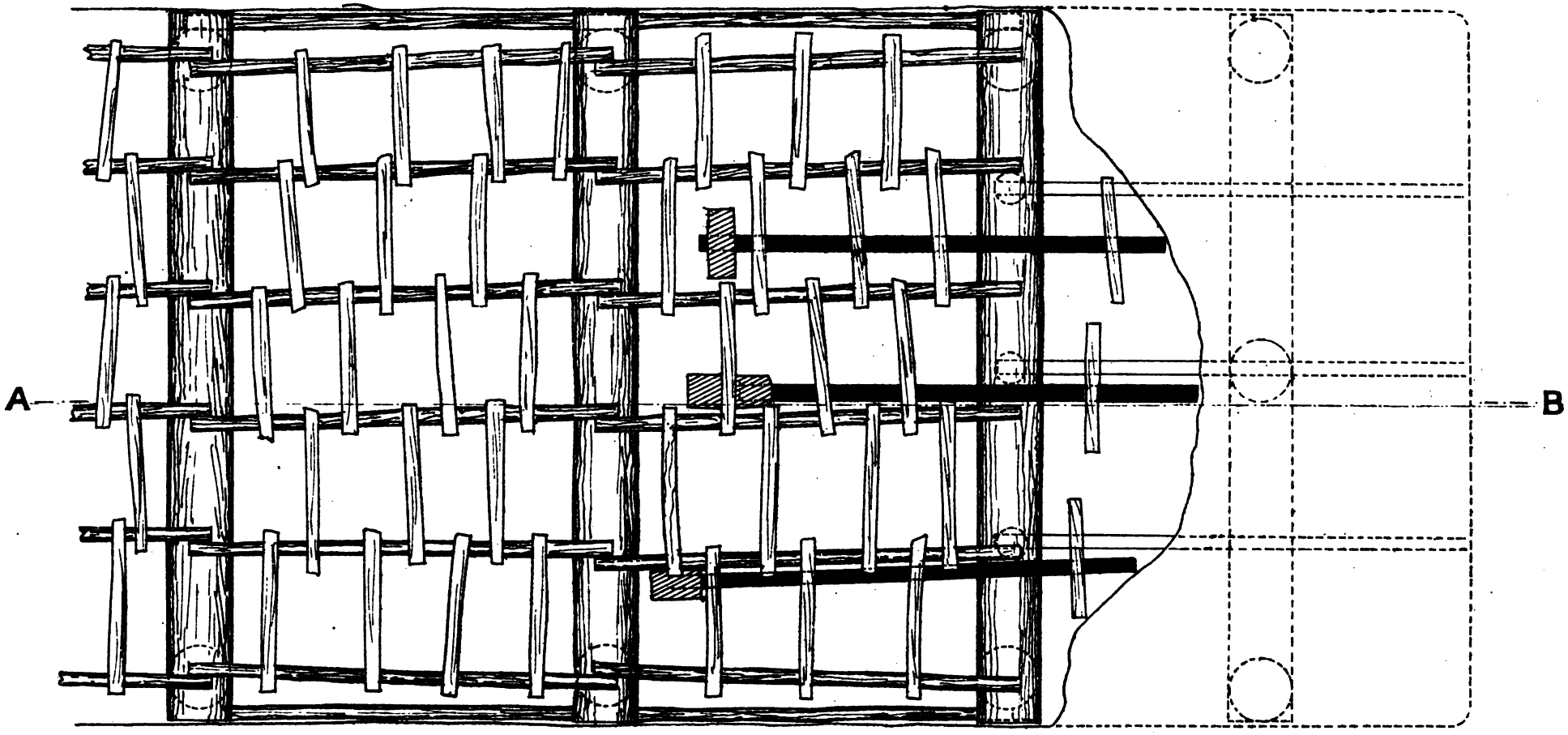
COURRIÈRES COLLIERIES.

PLAN OF A ROADWAY.



Scale

Inches. 12 6 0 1 2 3 4 5 6 7 8 9 10 Feet.

Decimetres. 10 5 0 1 2 3 Metres.

Plate V.

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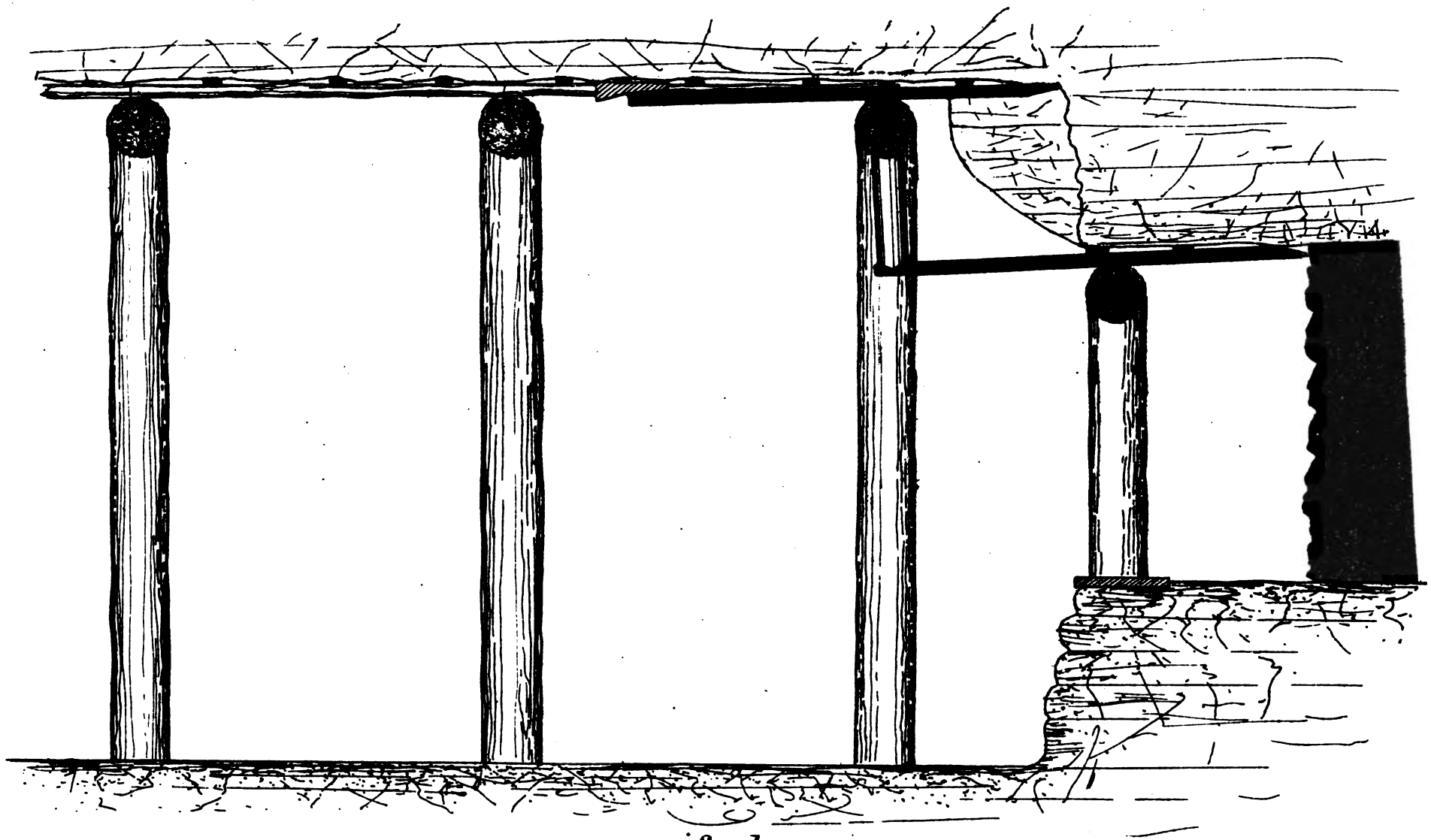
COURRIÈRES COLLIERIES.

ROADWAY, SECTION ALONG THE LINE A B.



Scale

Inches. 12 6 0 1 2 3 4 5 6 7 8 9 10 Feet.

Decimetres. 10 5 0 1 2 3 Metres

Plate VI.

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PLAN OF A WORKING FACE.

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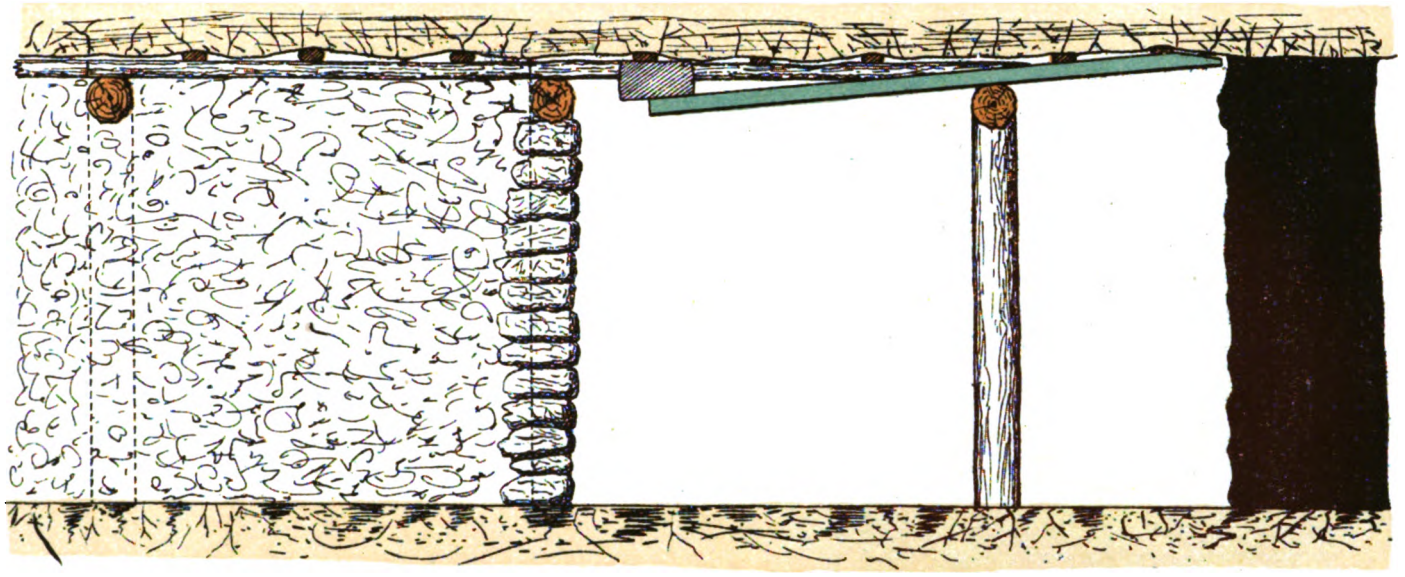
COURRIÈRES COLLIERIES.

WORKING FACE, SECTION ALONG THE LINE C D.



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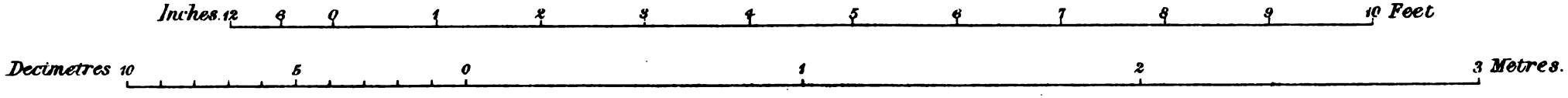

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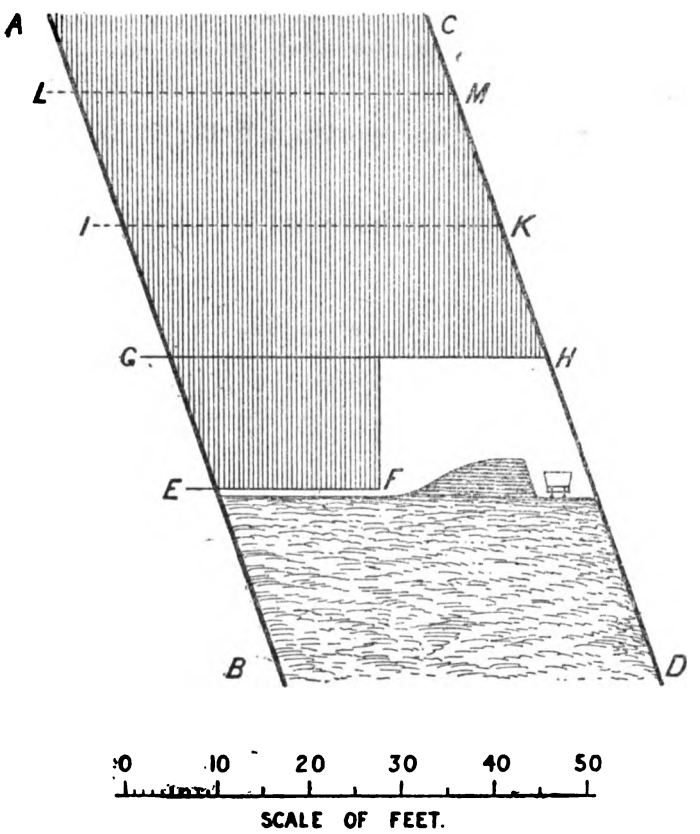
British death-rate will be very considerably lessened if these remedies are applied universally. If, further, the temporary iron supports are employed, there seems no reason why we should not in time bring down our death-rate as low as that of Courrières. This would mean a diminution in our death-roll by falls of ground from 450 to 90, or a saving of 360 lives annually, to say nothing of the prevention of many hundreds of non-fatal accidents.

Objectors may rise up and say that Courrières is a safe mine, and that it is absurd to dream of reducing our heavy death-rate by falls to that of some favourable example in France. My answer would be that Tables 59 and 60 are quite sufficient to refute this contention. They show that twenty years ago falls of ground were just as fatal per 1,000 persons at Courrières as they are with us now, and that reckoning by the million tons raised there was very little difference between us. These facts completely upset the supposition that Courrières can be called specially safe from natural causes.

To say the very least the Courrières methods deserve the earnest consideration of mining men. If my diagrams do not suffice to explain the principles to them, let them study the full size representation at the Paris Exhibition, or, better still, visit the mine itself, which can be reached in less than nine hours from London.

Another exhibit at Paris seems to me to afford hopes of reducing the death-rate from falls in our slate mines, where the excavations take the form of huge chambers, the roof and sides of which cannot be examined with ease. The "Comité des ventes des Ardoises de Labassère" showed drawings of the method of working a slate mine near Bagnères-de-Bigorre in the Pyrenees, which particularly attracted my attention.

The "vein" or bed of slate, from 30 to 40 feet in thickness, and dipping at an angle of about 60°, is worked by large chambers, which extend 170 feet along the strike and are separated from each other by pillars 20 feet thick. The undercutting is now done in these underground chambers by means of the wire-saw, an appliance which is in use at various open quarries in Europe for "getting" blocks of marble from the face and



for sub-dividing them later on. It was suggested by the Members of the Merionethshire Slate Mines Committee* that this wire-saw might be used "for cutting down the sides of the chambers mechanically, and so leaving the pillars in a safer condition"; but in the Pyrenees the work has gone still further, and at Labassère horizontal grooves, 170 feet long in the direction of the strike, are being cut from one side of the "vein" to the

* *Report of the Departmental Committee upon Merionethshire Slate Mines* [C.–7692], 1895, p. xxv.

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other a distance of 39 feet, in other words over a space of 6,630 square feet, and at a cost of only 1*s.* 4*d.* per square yard. These horizontal cuts are made at vertical intervals of about 13 feet, and the successive slices so formed are worked away in ascending order by men standing upon the rubbish.

Thus let A B represent the "floor" (geologically) of the bed, and C D the "roof;" the thick line G H denotes a horizontal groove cut by the wire-saw, E F part of a previous similar groove, and the dotted lines I K and L M future cuts. The slice E F G H is worked away as shown, and the vacant space is filled up with rubbish; about one half of this is furnished by waste produced in process of "getting" the blocks of slate, whilst the remainder is sent down from adjacent open quarries. When the filling is complete, a horizontal cut I K is made and the slice G H K I worked off in a similar fashion, and so on. This method of working unquestionably removes some of the dangers of slate mining, and M. Fieuzet, the director of the Labassère slate mine, is certainly to be congratulated on being the first to apply the wire-saw underground and on having done so with signal success. Not only are the workings safer, but there is far less loss of valuable rock. Where safety to life and limb can be combined with commercial economy, there surely ought to be no hesitation in trying the new method on this side of the Channel.

In a previous report* I mentioned Italy's contribution to the success of this invention, viz., Signor Monticolo's penetrating pulley.

3.—SHAFT ACCIDENTS.

Eighty-three deaths, or 8·5 per cent. of the total number of deaths in and about mines, were caused by shaft accidents. Sixty-nine of these occurred in coal mines. The increase in the number of deaths is unquestionably large, and yet no single shaft accident caused more than 2 deaths (Table 61). 22 of the deaths are classified in Table 62 under the heading "while ascending and descending by machinery"; but here it must be recollected that accidents in sinking pits are accountable for several of the fatalities. Mr. Martin (*District No. 12*) is strongly of opinion that guides should be made compulsory in sinking pits.

Accidents due to falling from "mid workings," that is to say, intermediate on-setting places, were somewhat numerous.

Several shaft accidents were due to deliberate infringements of the regulations.

TABLE 61.

SHAFT ACCIDENTS, classified according to the NUMBER of PERSONS killed in each.

1898.			1899.		
No. of Separate Fatal Accidents.	No. of Deaths per Accident.	Total No. of Deaths.	No. of Separate Fatal Accidents.	No. of Deaths per Accident.	Total No. of Deaths.
58	1	58	79	1	79
2	2	4	2	2	4
1	4	4	—	—	—
61	—	66	81	—	83

* *Mines and Quarries, General Report and Statistics for* 1897 [C.–9187], p. 364.

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TABLE 62.

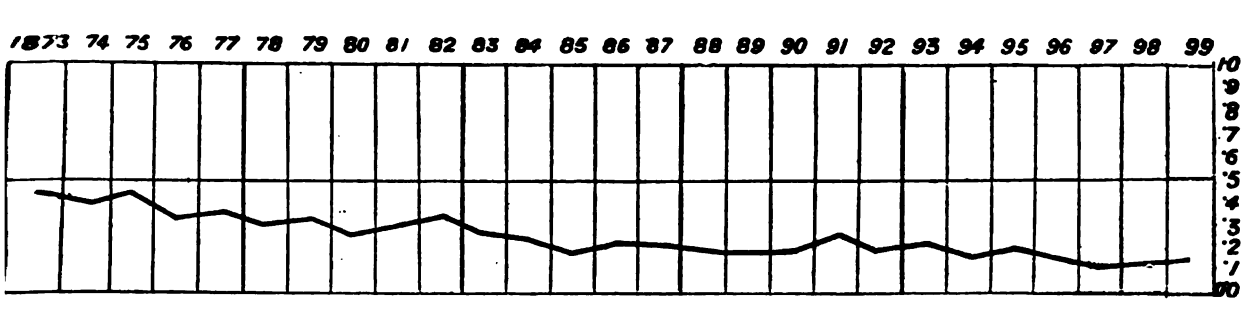
SHAFT ACCIDENTS, classified according to CAUSE.

Cause.	No. of Separate Fatal Accidents.	Comparison with preceding Year.	No. of Deaths.	Comparison with preceding Year.
Overwinding	1	+ 1	1	+ 1
Ropes or chains breaking	1	− 3	1	− 6
Whilst ascending or descending by machinery.	22	+ 10	23	+ 9
Falling into shaft from surface ...	9	=	9	=
Things falling from surface	6	+ 4	6	+ 4
Falling from part way down... ...	19	− 1	20	=
Things falling from part way down	8	+ 6	8	+ 6
Miscellaneous	15	+ 3	15	+ 3
Total	81	+ 20	83	+ 17

The following diagram shows the death-rates since 1872 :—

FIG. 8.

DEATH-RATE from SHAFT ACCIDENTS in all MINES per 1,000 PERSONS EMPLOYED UNDERGROUND.



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4.—MISCELLANEOUS ACCIDENTS UNDERGROUND.

Miscellaneous accidents underground were responsible for 258 deaths, or 26·5 per cent. of the total number of deaths from accidents.

Of the 258 deaths, no less than 170, or about two-thirds, occurred in connection with haulage.

TABLE 63.

MISCELLANEOUS ACCIDENTS UNDERGROUND, classified according to the NUMBER of PERSONS Killed in each.

1898.			1899.		
No. of Separate Fatal Accidents.	No. of Deaths per Accident.	Total No. of Deaths.	No. of Separate Fatal Accidents.	No. of Deaths per Accident.	Total No. of Deaths.
217	1	217	241	1	241
2	2	4	3	2	6
2	3	6	1	3	3
1	35	35	2	4	8
222	—	262	247	—	258

TABLE 64.

MISCELLANEOUS ACCIDENTS UNDERGROUND, classified according to CAUSE.

Cause.	No. of Separate Fatal Accidents.	Comparison with preceding Year.	No. of Deaths.	Comparison with preceding Year.
Explosives	30	+ 5	34	+ 8
Suffocation by natural gases	5	− 2	6	− 1
Underground fires	4	+ 3	10	− 25
Irruptions of water	3	+ 2	3	=
Haulage :—				
Inclined or engine planes	74	+ 3	74	+ 1
Ropes and chains breaking ...	7	+ 2	7	+ 2
Trams and tubs	89	+ 12	89	+ 11
Machinery	11	+ 9	11	+ 9
Sundries	24	− 9	24	− 9
Total	**247**	+ 25	**258**	− 4

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By Explosives.—The blasting accidents, exclusive of those mentioned under the heading "Shot-firing" in Table 55, are classified in the two following Tables :—

TABLE 65.

ACCIDENTS with EXPLOSIVES, classified according to the NATURE of the EXPLOSIVE.*

Description of Explosive.	No. of Fatal Accidents.	No. of Deaths.	No. of Non-fatal Accidents.	No. of Persons Injured.†
1. Gunpowder	14	15	132	148
2. Nitro-glycerine Compounds :				
Blasting gelatine	—	—	5	7
Carbo-gelatine	—	—	1	1
Carbonite	3	3	8	9
Gelatine dynamite	1	1	2	2
Gelignite	4	5	23	29
Gelignite and oxalate blasting powder ...	—	—	1	2
Gelignite and gunpowder	1	3	—	—
Kynite	—	—	1	1
3. Nitrate of Ammonium Compounds :				
Ammonite	—	—	9	11
Amvis	2	2	7	9
Bellite	—	—	4	6
Dahmenite	—	—	1	1
Electronite	—	—	1	1
Oxalate blasting powder	—	—	1	1
Roburite	4	4	4	4
Westfalite	—	—	1	1
4. Nitro-cellulose Compounds :				
Tonite or cotton powder	—	—	1	1
Tonite or cotton powder and gunpowder	1	1	—	—
5. Ammunition‡ :				
Detonators (Fulminate of mercury) ...	—	—	11	12
Safety fuse	—	—	1	1
Total	30	34	214	247

* Including one non-fatal accident on surface.
† Including some injured by accidents which proved fatal to their companions.
‡ As defined in Order of Council No. 1, under the Explosives Act, 1875.

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TABLE 66.

ACCIDENTS with EXPLOSIVES, classified according to their CHARACTER or CAUSE.*

Character or Cause.	No. of Fatal Accidents.	No. of Persons Killed.	No. of Non-fatal Accidents.	No. of Persons Injured.†
While conveying explosives	2	2	9	10
While charging or stemming holes—				
From sparks of match, lamp, or candle	1	1	21	23
From fire remaining from a previous charge ...	1	1	—	2
When using iron or steel tools...	1	1	—	—
When using wooden, brass, or copper tools	6	9	18	23
Premature explosions—				
With squibs or straws	—	—	14	14
With safety fuse	1	1	7	8
With electric fuse	1	1	—	—
Delayed explosions...	2	2	22	27
Unramming shots which had missed fire	1	1	7	9
Blows from stones projected by shots	5	5	47	52
Sundries and unknown	9	10	69	79
Total	**30**	**34**	**214**	**247**

Table 65 shows that gunpowder, as usual, caused far more accidents than any other explosive; but as the total quantities used are not known, the figures given in the table afford no gauge of the relative safety of the explosives named.

Mr. Martin gives a list of the quantities of the different explosives used in his district (*No. 12*), from which it appears that, out of 121 tons fired, about half was Gunpowder, nearly one-eighth Carbonite, one-tenth Roburite, one-twelfth Gelignite, the remainder being composed of small quantities of sundry other compounds.

Suffocation by Natural Gases.—6 deaths were due to suffocation. Two men incautiously entered a place which they knew to contain fire-damp in order to pick up an iron sheet. They paid with their lives the penalty of their deliberate rashness.

The other 4 deaths were caused by the so-called "stythe" or "black damp," *i.e.* air containing large excess of carbonic acid and a reduced percentage of oxygen.

Underground Fires.—There were 4 fatal underground fires, and 2 of these claimed 4 victims each. One happened at Southam Iron Ore Mine, Cumberland, where the fire originated in a pump station. Whether the timber of the pump station was ignited by a lamp, by a candle stuck up against it, or by the spontaneous combustion of waste could not be decided. The other, at the Duneen Bay Barytes Mine, County Cork, was of a very unusual nature. Ashes from the boiler at the surface were thrown down into a small shaft, and employed underground for filling up the excavation. While the men in a level

* Including one non-fatal accident on surface.

† Including some injured by accidents which proved fatal to their companions.

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below were prodding at the ashes which had stuck in the shaft, the choke suddenly gave way, a rush of hot air and dust followed, which burned the men so severely that they died. No doubt there were burning cinders among the ashes.

Of the 2 other fatal fires, one was probably caused by the upsetting of a paraffin lamp, in a timber cabin near the pit bottom.

Irruptions of Water.—There were three fatal irruptions of water. One was the result of depending upon a plan 20 years old, which turned out to be inaccurate. Two were due to errors of judgment. Fortunately none of the three accidents caused more than one death.

Underground Haulage.—Particulars respecting the number of the accidents in connection with underground haulage are given in the following table :—

TABLE 67.

UNDERGROUND HAULAGE ACCIDENTS.

Nature of Accident.	No. of Fatal Accidents.	No. of Deaths.
While engaged as riders, hauliers, drivers, drawers, putters, &c.	86	86
While engaged in coupling or uncoupling waggons	3	3
While engaged as roadsmen, oilers, &c.	35	35
While walking in bye or out bye to or from their work	26	26
In other ways	20	20
Total	**170**	**170**

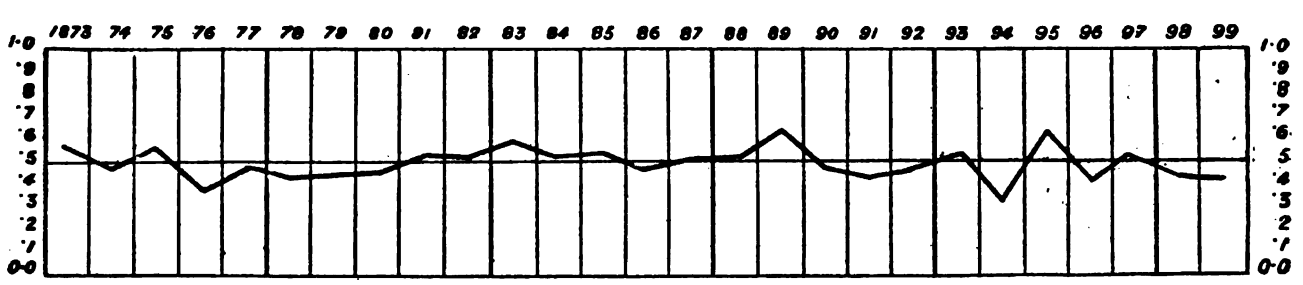
Accidents connected with haulage are responsible for two-thirds of all the "Miscellaneous" fatalities. A large number would be prevented if the managers enforced stricter discipline and stopped the practice of riding upon the "tubs," which is forbidden by the Special Rules of many districts.

Machinery.—At the Slate mines in North Wales men are often injured while using hand winches to drag or lift heavy pieces of rock. I learnt at the Paris Exhibition that winches worked by electricity are now in regular use at French underground quarries, with a decided gain in safety and economy. The good example set by our neighbours deserves to be followed by Welsh quarry owners.

The following diagram, giving the annual death-rate from 1873 to 1899, shows that there has been no material reduction in the mortality figure since the passing of the Mines Regulation Acts :—

FIG. 9.

DEATH-RATE from MISCELLANEOUS ACCIDENTS per 1000 PERSONS Employed UNDERGROUND.



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5.—ON SURFACE.

Accidents on the surface caused 121 deaths, or 12·5 per cent. of the total number of fatalities at mines. This figure shows a decrease of 14 deaths on the preceding year. The death-rate per 1,000 persons employed above-ground was ·75.

The following tables give particulars of the surface accidents, classified according to the number of persons killed in each and according to the cause.

TABLE 68.

FATAL ACCIDENTS on the SURFACE, classified according to the NUMBER of PERSONS Killed in each.

1898.			1899.		
No. of Separate Fatal Accidents.	No. of Deaths per Accident.	Total No. of Deaths.	No. of Separate Fatal Accidents.	No. of Deaths per Accident.	Total No. of Deaths.
125	1	125	121	1	121
3	2	6	—	—	—
1	4	4	—	—	—
129	—	135	**121**	—	**121**

TABLE 69.

FATAL ACCIDENTS on the SURFACE, classified according to the CAUSE.

Cause or Place	No. of Separate Fatal Accidents.	Comparison with preceding year.	No. of Deaths.	Comparison with preceding year.
Machinery	16	— 9	16	— 10
Boiler explosion	1	— 1	1	— 5
Railways or sidings of mine	71	+ 14	71	+ 14
Miscellaneous	33	— 12	33	— 13
Total	**121**	— 8	**121**	— 14

Machinery.—Several of the machinery accidents were consequent upon carelessness, inattention or playing ; two were due to the use of circular saws.

I added to my Annual Report a translation, made by my assistant, Mr. G. J. Williams, of some useful instructions for preventing accidents from pulleys, shafting, gearing, and belts, which were issued in 1898 by the Association of French Manufacturers for the Prevention of Accidents.* This association is doing good and useful work, and I was much pleased with its exhibit at Paris. By the aid of models and full-size examples the manufacturer could learn how to fence shafting and gearing, how to render circular saws safe, and how to ship and unship belts without any risk. As I stated in my annual report, a similar association would be of service in this country, and this is what I should like to see. If, however, no such society is established voluntarily by our manufacturers, then I would advocate the creation of a Government museum containing models and representations of life- and limb-saving appliances, as object-lessons to master, man, and inspector. Each trade has its own peculiar dangers to life, limb or health, and though some persons may consider that a Government has done all that is needed when it has forbidden a dangerous practice, such as leaving machinery unfenced, others may think that the State may further be expected to give some hints as to the best methods of carrying out its decrees.

* Now published separately :—*Mill gearing and the management of Belts.—Prevention of Accidents.*—Translated by G. J. Williams, Her Majesty's Inspector of Mines, from a pamphlet issued by the "Association des Industriels de France contre les Accidents du Travail." London, 1900. *Price* 6*d.*

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Boiler Explosions.—A man was fatally scalded by an escape of steam from a faulty joint between two pipes. No formal enquiry was held by the Board of Trade in this case. A difference of opinion may fairly arise as to whether a mere outrush of steam without any fracture of the containing vessel is to be called an explosion, but it will be seen by the accompanying list of official inquiries that mishaps of this description are sometimes reckoned as explosions by the Board of Trade.

The following is a list of the official inquiries by the BOARD OF TRADE with respect to Boiler Explosions which have happened in or about Mines in the United Kingdom during the year 1899 :—

TABLE 70.

No. of Board of Trade Report.	Name and Situation of Mine.	Date of Explosion.	No. of Persons.		Description of Boiler or part which exploded.	Nature of Explosion.	Cause of Explosion.
			Killed.	Injured.			
1,175 Preliminary Inquiry.	Polton Colliery, Bonnyrigg, Edinburgh.	31 Mar. 1899	—	1	Main steam-pipe of cast iron for conveying steam to pumping engine.	Sudden and violent escape of hot water, followed by steam, from two flanged joints, the jointing material (rubber insertion) being partly blown out.	The using of unsuitable jointing material, and to the insufficiency of the fastenings of the flanges to retain the joints in position.
1,176 Preliminary Inquiry.	Deaf Hill Colliery Trimdon Grange, Co Durham.	25 Mar. 1899	—	1	Stop-valve, chest, and main steam-pipe of cast iron.	The stuffing-box expansion joint was blown off the end of the main steam pipe. At the same time the steam pipe leading to the winding engine, also the main stop valve on No. 5 boiler, were broken, and the steam escaped.	The expansion joint being forced off the end of the main steam-pipe.
1,191 Preliminary Inquiry.	Preston Colliery, North Shields, Durham.	3 Jul. 1899	—	1	Brass tube in boiler of ordinary locomotive engine.	Collapse and rupture of tube through which steam and hot water escaped.	A tube had become so thin near the smoke-box end, that it was not able to withstand the ordinary working pressure of the boiler.
1,192 Preliminary Inquiry.	Maritime Colliery, Pontypridd, Glamorganshire.	21 Jul. 1899	—	1	Brass tube in boiler of ordinary locomotive engine.	Collapse and rupture of tube near the fire-box end, which allowed the contents of boiler to escape.	A tube had become so reduced in thickness by wasting on the fire-side as to be unable to withstand the pressure.

Railways, Sidings, or Tramways.—Accidents under this heading are unquestionably numerous; in the table below they are referred to sundry causes, of which "moving waggons" and "crushing between waggons, or between waggons and structures," are the most common.

TABLE 71.

ACCIDENTS on SURFACE RAILWAYS, SIDINGS or TRAMWAYS.

Cause of Accident.	No. of Fatal Accidents.	No. of Deaths.	No. of Non-fatal Accidents.	No. of Injured.
While engaged in moving waggons	17	17	51	51
While engaged in coupling or uncoupling waggons.	9	9	14	14
Run over whilst passing along or across railways or tramways.	14	14	14	14
Crushed between waggons, or between waggons and structures.	17	17	49	49
In other ways	14	14	48	48
Total	71	71	176	176

Miscellaneous.—New discoveries, though benefiting the industry on the whole, often brig with them new dangers, and this is the case with acetylene. Mr. Stokes (*District No. 8*) describes a fatal accident at some small works for supplying acetylene gas as an illuminant at a colliery. A man incautiously struck a match while cleaning out the generators and ignited a mixture of gas and air, which exploded with such violence as to kill him.

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COMPARISON OF BRITISH COALFIELDS WITH ONE ANOTHER.

The following tables institute a comparison between the different coalfields as regards accidents :—

TABLE 72.

NUMBER of DEATHS from ACCIDENTS in 1899, and the DEATH-RATE per 1,000 PERSONS Employed and per 1,000,000 Tons of MINERAL Raised in and about COAL MINES in the different COALFIELDS during the Years 1898 and 1899.

Coalfield.	Number of Deaths.			Death-rate from Accidents per 1,000 Persons Employed.				Number of Deaths per 1,000,000 Tons of Mineral Raised.	
	1899.			1899.			1898.		
	Under-ground.	Above-ground.	Total.	Under-ground.	Above-ground.	Total.	Total.	1899.	1898
1. Scotch coalfields	114	21	135	1·54	1·28	1·49	1·72	4·19	4·76
2. Northern coalfield	144	24	168	1·28	0·73	1·16	1·09	3·59	3·33
3. Yorkshire, &c., coalfield ...	114	24	138	0·88	0·70	0·84	0·95	2·74	3·17
4. Lancashire and Cheshire coalfield.	104	11	115	1·35	0·67	1·38	1·50	4·54	4·96
5. Midland coalfields	64	10	74	1·29	0·62	1·12	1·70	3·42	5·04
6. Small detached coalfields ...	18	5	23	1·12	1·19	1·13	0·92	4·93	4·05
7. North Wales coalfield ...	14	—	14	1·43	—	1·17	1·73	4·27	6·07
8. South Wales coalfield ...	199	18	217	1·78	0·87	1·64	1·23	5·41	5·91
9. Irish coalfields	2	—	2	2·73	—	2·01	4·08	15·23	29·2
Total and average ...	773	113	886	1·35	0·79	1·24	1·28	3·95	4·30

Leaving aside the Irish coalfields, and the small detached coalfields, which have their death-rates considerably affected by a few casualties, the South Wales coalfield has the highest death-rate, the Yorkshire, &c. coalfield the lowest.

TABLE 73.

COMPARISON of COALFIELDS as to proportion of PERSONS Employed, MINERAL Raised, and DEATHS from ACCIDENTS in and about Coal Mines in each.

Coalfield.	1898.			1899.		
	Percentage of Total Number of Persons Employed.	Percentage of Total Mineral Raised.	Percentage of Total Number of Deaths from Accidents.	Percentage of Total Number of Persons Employed.	Percentage of Total Mineral Raised.	Percentage of Total Number of Deaths from Accidents.
1. Scotch coalfields	12·5	15·1	16·8	12·6	14·4	15·2
2. Northern coalfield	20·2	22·2	17·2	20·3	20·8	19·0
3. Yorkshire, &c., coalfield	22·9	23·6	17·0	23·0	22·4	15·6
4. Lancashire and Cheshire coalfield ...	12·0	12·1	14·1	11·7	11·3	13·0
5. Midland coalfields	9·1	10·2	12·1	9·2	9·6	8·3
6. Small detached coalfields	3·0	2·2	2·1	2·8	2·1	2·6
7. North Wales coalfield	1·6	1·5	2·3	1·7	1·5	1·6
8. South Wales coalfield	18·6	13·0	17·9	18·6	17·9	24·5
9. Irish coalfields	0·1	0·1	0·5	0·1	0·0	0·2
Total for the United Kingdom ...	100·0	100·0	100·0	100·0	100·0	100·0

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TABLE 74.

NUMBER of DEATHS from ACCIDENTS in and about COAL MINES in the different COALFIELDS of the UNITED KINGDOM during the YEAR 1899.

	Place or Cause of Accident.	Coalfields.									Gross Total.	Comparison with preceding Year.
		Scotch Coalfields.	Northern Coalfield.	Yorkshire, &c., Coalfield.	Lancashire and Cheshire Coalfield.	Midland Coalfields.	Small Detached Coalfields.	North Wales Coalfield.	South Wales Coalfield.	Irish Coalfields.		
Explosions of Fire-damp or Coal Dust.		**14**	**9**	**2**	—	**5**	—	**2**	**20**	—	**52**	+ 25
Falls of Ground.	Falls of Side	17	17	11	11	8	3	4	26	—	97	+ 12
	Falls of Roof	38	65	61	49	26	7	4	73	2	325	— 13
	Total	**55**	**82**	**72**	**60**	**34**	**10**	**8**	**99**	**2**	**422**	— 1
Shaft Accidents.	Overwinding	—	—	1	—	—	—	—	—	—	1	+ 1
	Ropes and Chains breaking	1	—	—	—	—	—	—	—	—	1	— 5
	Whilst ascending or descending by Machinery.	4	4	2	—	—	3	1	6	—	20	+ 7
	Falling into Shaft from Surface ...	1	2	1	1	—	—	—	1	—	6	— 2
	Things falling from Surface	1	—	—	—	1	—	—	3	—	5	+ 3
	Falling from part way down	6	3	1	3	2	—	—	1	—	16	— 4
	Things falling from part way down...	1	1	—	1	2	—	—	2	—	7	+ 6
	Miscellaneous	—	2	3	3	1	—	—	4	—	13	+ 1
	Total	**14**	**12**	**8**	**8**	**6**	**3**	**1**	**17**	—	**69**	+ 7
Miscellaneous Underground.	By Explosives	6	3	4	5	3	—	—	6	—	27	+ 11
	Suffocation by Natural Gases... ...	—	1	—	3	1	—	1	—	—	6	— 1
	By Underground Fires..	1	1	—	—	—	—	—	—	—	2	— 35
	Irruptions of Water	—	—	—	—	—	—	1	2	—	3	=
	Haulage :—											
	On Inclined and Engine Planes ...	6	8	9	20	3	3	1	19	—	69	— 3
	Ropes or Chains breaking	2	—	—	—	—	—	—	4	—	6	+ 4
	By Trams and Tubs	10	23	16	4	8	1	—	26	—	88	+ 11
	By Machinery	2	1	2	2	1	1	—	1	—	10	+ 8
	Sundries	4	4	1	2	3	—	—	5	—	19	— 12
	Total	**31**	**41**	**32**	**36**	**19**	**5**	**3**	**63**	—	**230**	— 17
	Total Underground	**114**	**144**	**114**	**101**	**64**	**18**	**14**	**199**	**2**	**773**	+ 14
On Surface.	By Machinery	1	4	4	2	—	2	—	2	—	15	— 10
	Boiler Explosions	—	—	—	1	—	—	—	—	—	1	— 5
	Railways, Sidings, or Tramways ...	15	15	13	4	7	—	—	15	—	69	+ 14
	Miscellaneous	5	5	7	4	3	3	—	1	—	28	— 14
	Total on Surface	**21**	**24**	**24**	**11**	**10**	**5**	—	**18**	—	**113**	— 15
	Gross Total in 1899	**135**	**168**	**138**	**115**	**74**	**23**	**14**	**217**	**2**	**886**	— 1
	Total in preceding Year	149	153	151	125	107	19	20	159	4	887	— 14

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TABLE 75.

PERCENTAGE PROPORTION of the DEATHS due to different causes in each separate COALFIELD, compared with the TOTAL NUMBER in that COALFIELD, for the Year 1899.

	Place or Cause of Accident.	Coalfields. Scotch Coalfields.	Northern Coalfield.	Yorkshire, &c., Coalfield.	Lancashire and Cheshire Coalfield.	Midland Coalfields.	Small Detached Coalfields.	North Wales Coalfield.	South Wales Coalfield.	Irish Coalfields.	General Averages.	General Averages for preceding Year.
	Explosions of Fire-damp or Coal Dust.	**10·4**	**5·3**	**1·4**	—	**6·7**	—	**14·3**	**9·2**	—	**5·9**	3·0
Falls of Ground.	Falls of Side	12·6	10·1	8·0	9·6	10·8	13·0	28·6	12·0	—	10·9	9·6
	Falls of Roof	28·1	38·7	44·2	42·6	35·2	30·5	28·6	33·6	100·0	36·7	38·1
	Total	**40·7**	**48·8**	**52·2**	**52·2**	**46·0**	**43·5**	**57·2**	**45·6**	**100·0**	**47·6**	47·7
Shaft Accidents.	Overwinding	—	—	·7	—	—	—	—	—	—	·1	—
	Ropes and Chains breaking...	·7	—	—	—	—	—	—	—	—	·1	·7
	Whilst ascending or descending by Machinery.	3·0	2·4	1·5	—	—	13·0	7·2	2·8	—	2·2	1·5
	Falling into Shaft from Surface.	·7	1·2	·7	·9	—	—	—	·5	—	·7	·9
	Things falling from Surface	·7	—	—	—	1·4	—	—	1·4	—	·6	·2
	Falling from part way down	4·6	1·8	·7	2·6	2·7	—	—	·5	—	1·8	2·2
	Things falling from part way down.	·7	·6	—	·9	2·7	—	—	·9	—	·8	·1
	Miscellaneous	—	1·2	2·2	2·6	1·4	—	—	1·8	—	1·5	1·4
	Total	**10·4**	**7·2**	**5·8**	**7·0**	**8·2**	**13·0**	**7·2**	**7·9**	—	**7·8**	7·0
Miscellaneous Underground.	By Explosives	4·5	1·8	2·9	4·3	4·0	—	—	2·8	—	3·1	1·8
	Suffocation by Natural Gases	—	·6	—	2·6	1·4	—	7·1	—	—	·7	·8
	By Underground Fires ...	·7	·6	—	—	—	—	—	—	—	·2	4·2
	Irruptions of Water	—	—	—	—	—	—	7·1	·9	—	·3	·4
	Haulage :—											
	On Inclined and Engine Planes.	4·5	4·7	6·5	17·4	4·0	18·0	7·1	8·7	—	7·8	8·1
	Ropes or Chains breaking	1·5	—	—	—	—	—	—	1·8	—	·7	·2
	By Trams and Tubs ...	7·3	13·7	11·6	3·5	10·8	4·4	—	12·0	—	9·9	8·7
	By Machinery...	1·5	·6	1·5	1·7	1·4	4·4	—	·5	—	1·1	·2
	Sundries	3·0	2·4	·7	1·7	4·0	—	—	2·3	—	2·1	3·5
	Total	**23·0**	**24·4**	**23·2**	**31·2**	**25·6**	**21·8**	**21·3**	**29·0**	—	**25·9**	27·9
	Total Underground	**84·5**	**85·7**	**82·6**	**90·4**	**86·5**	**78·3**	**100·0**	**91·7**	**100·0**	**87·2**	85·6
On Surface.	By Machinery...	·7	2·4	2·9	1·7	—	8·7	—	·9	—	1·7	2·8
	Boiler Explosions	—	—	—	·9	—	—	—	—	—	·1	·9
	Railways, Sidings, or Tramways.	11·1	8·9	9·4	3·5	9·5	—	—	6·9	—	7·8	6·0
	Miscellaneous	3·7	3·0	5·1	3·5	4·0	13·0	—	·5	—	3·2	4·7
	Total on Surface	**15·5**	**14·3**	**17·4**	**9·6**	**13·5**	**21·7**	—	**8·3**	—	**12·8**	14·4
	Gross Total...	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	**100·0**	100·0

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The following table compares the death-rates of the principal mining counties during the year 1899 with the corresponding figures of the preceding year.

TABLE 76.

DEATH-RATES from ACCIDENTS in all MINES in the principal MINING COUNTIES, for the years 1898 and 1899.

COUNTY.	Number of Persons Employed Below Ground in 1899.	Number of Deaths from Accidents Below Ground in 1899.	Death-rate per 1,000 Persons Employed Below Ground.	
			1899.	1898.
1. Nottingham	20,309	9	·44	·86
2. Cornwall	3,238	2	·62	2·55
3. Stirling	5,615	4	71	1·80
4. Warwick	6,855	5	·73	·92
5. Ayr	10,854	9	·83	2·92
6. Gloucester	6,002	5	·83	·62
7. Northumberland	30,558	27	·88	·94
8. Denbigh	8,180	8	·98	1·78
9. York	81,282	82	1·01	1·13
10. Monmouth	26,973	30	1·11	1·01
11. Leicester	5,189	6	1·16	8·24
12. Derby	35,508	43	1·21	1·02
13. Carmarthen	3,956	5	1·26	·80
14. Stafford	33,717	46	1·36	1·20
15. Somerset	4,358	6	1·38	1·13
16. Durham	82,701	117	1·41	1·24
17. Lanark	37,885	56	1·48	1·34
18. Lancashire	67,247	104	1·55	1·72
19. Merioneth	2,603	5	1·92	·37
20. Shropshire	3,103	6	1·93	2·57
21. Fife	11,274	22	1·95	1·04
22. Cumberland	9,987	20	2·00	1·18
23. Glamorgan	79,645	160	2·01	1·34
24. Linlithgow	4,441	9	2·03	2·17
25. Worcester	1,841	4	2·17	·98
26. Flint	2,806	8	2·85	3·44
27. Brecon	1,276	4	3·13	2·56
28. Dumbarton	1,542	5	3·24	2·45
29. Edinburgh	4,869	16	3·29	1·81
30. Cheshire	2,103	8	3·80	1·40

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QUARRIES.

The total number of fatal accidents which happened in and about the quarries of the United Kingdom under the Quarries Act, 1894, was 117, or 1 less than in the preceding year. The total number of deaths was 117, or 14 less than in 1898. Of these 117 separate accidents, 98 causing 98 deaths happened "inside" the quarries, and 19 causing 19 deaths "outside."

These accidents are classified in the following tables according to the number of deaths occasioned by each, the kind of mineral worked, and finally according to place and cause :—

TABLE 77.

NUMBER of DEATHS caused by each ACCIDENT.

1898.				1899.			
No. of Separate Accidents.	No. of Deaths per Accident.	Total No. of Deaths.	Percentage of Total No. of Deaths.	No. of Separate Accidents.	No. of Deaths per Accident.	Total No. of Deaths.	Percentage of Total No. of Deaths.
128	1	128	95·5	117	1	117	100·0
3	2	6	4·5	—	—	—	—
131	—	134	100·0	**117**	—	**117**	**100·0**

TABLE 78.

DEATHS from ACCIDENTS in and about QUARRIES, classified according to the kind of MINERAL worked.

Kind of Mineral.	Inside.	Outside.	Total.	Comparison with previous Year.
Chalk	4	1	5	− 2
Clay and brick earth	20	2	22	− 6
Igneous rock	17	5	22	+ 9
Iron ore...	1	—	1	+ 1
Limestone, other than chalk	21	3	24	− 3
Sandstone	23	7	30	− 8
Slate	9	1	10	− 4
Other rocks and minerals	3	—	3	− 4
Total for 1899	**98**	**19**	**117**	**− 17**
„ for preceding year ...	100	34	134	+ 11

This table must be read in connection with Table 47, showing the number of persons employed in quarrying each kind of mineral.

As stated in Part I., pages 6 and 7, the decrease in the number of deaths is, in part, due to the transfer of many of the works connected with quarries from the Mines Branch of the Home Office to the Factory Branch.

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TABLE 79.

DEATHS from ACCIDENTS in and about QUARRIES, classified according to MINERAL WORKED and COUNTRY.

Kind of Mineral.	Number of Deaths.				
	England.	Wales.	Scotland.	Ireland.	Total.
Chalk	5	—	—	—	5
Clay and brick earth	20	1	1	—	22
Igneous rocks	10	2	6	4	22
Iron ore	1	—	—	—	1
Limestone, other than chalk ...	15	5	1	3	24
Sandstone	19	2	8	1	30
Slate	—	10	—	—	10
Other rocks and minerals ...	—	1	2	—	3
Total for 1899	**70**	**21**	**18**	**8**	**117**
„ for the preceding year	84	26	21	3	134

TABLE 80.

DEATHS from ACCIDENTS in and about QUARRIES, arranged according to CAUSE and COUNTRY.

Causes of Accidents.	Number of Deaths.					Comparison with preceding Year.
	Country.				Total for 1899.	
	England.	Wales.	Scotland.	Ireland.		
INSIDE the QUARRIES (*i.e.*, inside the actual Pits, Holes, or Excavations).						
Falls of Ground:—						
From beyond the person's own working place.	11	2	3	—	16	=
From the person's own working place ...	15	4	5	4	28	=
Total	26	6	8	4	44	=
By Blasting:—						
While charging or tamping	1	2	—	—	3	− 3
From stones projected by shots	2	1	—	—	3	+ 1
From miss-fires	—	—	—	—	—	=
Miscellaneous	—	—	2	—	2	=
Total	3	3	2	—	8	− 2

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DEATHS from ACCIDENTS in and about QUARRIES, arranged according to CAUSE and COUNTRY—*continued.*

Causes of Accidents.	Number of Deaths.					
	Country.				Total for 1899.	Comparison with preceding Year.
	England.	Wales.	Scotland.	Ireland.		
INSIDE the QUARRIES—*continued.*						
During Descent or Ascent:—						
Falling from paths, steps, or ladders ...	1	—	1	—	2	+1
When ascending or descending by machinery.	—	—	—	—	—	−1
Miscellaneous	—	—	—	—	—	=
Total	1	—	1	—	2	=
Miscellaneous:—						
Ropes or chains breaking	—	—	—	—	—	−3
Machinery	1	1	—	1	3	−4
Boilers bursting	—	—	—	—	—	=
Inclined and engine planes	2	—	—	—	2	+1
Railways, sidings, or tramways	7	1	—	—	8	+1
Falling from ledges	7	5	—	1	13	+9
Sundries	10	3	4	1	18	−2
Total	27	10	4	3	44	=
Total inside quarries ...	57	19	15	7	98	−2
OUTSIDE the QUARRIES, at factories or workshops connected with quarries, situated within one mile of them, and belonging to the same owner.						
Machinery	4	1	3	—	8	−7
Hot liquid or molten metal or other substance in vat or pan.	—	—	—	—	—	−1
Boiler explosions	—	—	—	1	1	+1
Escape of gas, steam, or metal	—	—	—	—	—	=
Inclined planes	—	—	—	—	—	−4
Tramways, sidings, or railways	6	—	—	—	6	+1
Miscellaneous	3	1	—	—	4	−5
Total outside quarries ...	13	2	3	1	19	−15
Gross total in and about quarries for 1899.	**70**	**21**	**18**	**8**	**117**	**−17**
Do. for preceding year	84	26	21	3	134	+11

Table 80 shows very little improvement. It is only in the case of the blasting accidents that the casualties *inside* quarries have been reduced in number.

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TABLE 81.

SUMMARY of FATAL ACCIDENTS in and about QUARRIES, classified according to PLACE and CAUSE.

Place and Cause.	No. of Separate Accidents.	No. of Deaths.	Percentage of Total Number of Deaths.	Comparison with the preceding Year.	
				Fatal Accidents.	Deaths.
INSIDE THE QUARRIES :					
1. Falls of ground	44	44	37·6	+ 1	=
2. By blasting	8	8	6·8	=	− 2
3. During descent or ascent...	2	2	1·7	=	=
4. Miscellaneous	44	44	37·6	=	=
Total inside the quarries	98	98	83·7	+ 1	− 2
OUTSIDE THE QUARRIES ...	19	19	16·3	− 15	− 15
Gross Total	**117**	**117**	**100·0**	− 14	− 17

In the following tables the five categories are dealt with separately :—

INSIDE THE QUARRIES.

1.—FALLS OF GROUND.

TABLE 82.

ACCIDENTS from FALLS of GROUND.

Kind of Fall.	No. of Separate Fatal Accidents.	No. of Deaths from Accidents.	Comparison with the preceding Year.	
			Fatal Accidents.	Deaths.
From beyond the person's working place ...	16	16	=	=
From the person's own working place ...	28	28	+ 1	=
Total	**44**	**44**	+ 1	=

As in the case of mines, the accidents in quarries due to falls of ground exceed by far those arising from any other cause. The death-rate for the year from this cause per 1,000 persons employed inside quarries was ·69, a figure closely approaching that which obtains in mines, where the danger from falls of roof or side would at first sight appear to be far more considerable than in quarries.

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Several of the accidents might have been prevented by due observance of the Special Rules, which prescribe that the "overburden" should be properly cleared back from the edge of the working face. Undercutting is likewise a frequent cause of disaster. Mr. Stokes (*District No. 8*) is of opinion that, if it is allowed to go on, either the overlying rock should be temporarily supported by timber, or a competent person should be specially told off to watch the working face and give warning of any impending danger.

TABLE 83.

ACCIDENTS with EXPLOSIVES, classified according to their CHARACTER or CAUSE.

Character or Cause.	No. of Fatal Accidents.	No. of Persons Killed.	No. of Non-fatal Accidents.	No. of Persons Injured.*
While conveying explosives	—	—	2	2
While thawing explosives	—	—	1	1
While charging or stemming holes—				
From sparks of match, fuse, lamp, or candle	—	—	3	4
From fire remaining from a previous charge	1	1	4	7
When using iron or steel tools	—	—	2	2
When using wooden, brass, or copper tools	1	1	11	15
In other ways	1	1	2	4
Premature explosions—				
With squibs or straws	—	—	—	—
With safety fuse	1	1	5	6
With electric fuse	—	—	—	—
Delayed explosions	—	—	5	6
Unramming shots which had missed fire	—	—	11	17
While boring or working near unexploded remnants left by incomplete detonation of the charge.	—	—	3	3
Blows from stones projected by shots	3	3	25	25
Sundries and unknown	1	1	12	14
Total	**8**	**8**	**86**	**106**

TABLE 84.

ACCIDENTS with EXPLOSIVES, classified according to the NATURE of the EXPLOSIVE.

Description of Explosive.	No. of Fatal Accidents.	No. of Persons Killed.	No. of Non-fatal Accidents.	No. of Persons Injured.*
1. Gunpowder	5	5	61	76
2. Nitro-glycerine compounds :—				
Blasting-gelatine	1	1	6	6
Dynamite	—	—	2	4
Gelatine dynamite	—	—	4	6
Gelignite	1	1	11	12
Gelignite and gunpowder	—	—	1	1
3. Nitrate of ammonium compounds: —				
Ammonite	—	—	—	—
4. Nitro-cellulose compounds :—				
Tonite or cotton powder	1	1	1	1
5. Ammunition† :—				
Detonator (fulminate of mercury)	—	—	—	—
Total	**8**	**8**	**86**	**106**

* Including some injured by accidents which proved fatal to their companions.
† As defined in the Order in Council No. 1 of the Explosives Act, 1875.

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Blasting.—Handling and using explosives will never be entirely exempt from danger, and occasional accidents while charging, stemming, or firing holes must be expected; on the other hand the most frequent cause of blasting accidents, *viz.*, blows from stones projected by shots, can be abolished altogether if managers will enforce the Special Rule which bids men make use of shelters. Better discipline is sadly needed in many quarries.

3.—DURING DESCENT OR ASCENT.

TABLE 85.

ACCIDENTS during DESCENT or ASCENT.

Description.	No. of Fatal Accidents.	No. of Persons Killed.	Comparison with the preceding Year.	
			Fatal Accidents.	Deaths.
Falling from paths, steps, or ladders	2	2	+ 1	+ 1
While ascending or descending by machinery	—	—	− 1	− 1
Miscellaneous	—	—	=	=
Total	**2**	**2**	=	=

Two persons were killed: one who was somewhat intoxicated had been very properly prevented by the quarry foreman from starting work; while leaving the quarry he stumbled, rolled down a grassy slope, and fell into the quarry. The other fell 15 feet from an unfenced bridge.

4.—MISCELLANEOUS.

TABLE 86.

MISCELLANEOUS ACCIDENTS INSIDE THE QUARRIES.

Description.	No. of Fatal Accidents.	No. of Persons Killed.	Comparison with the preceding Year.	
			Fatal Accidents.	Deaths.
Ropes or chains breaking	—	—	− 3	− 3
Machinery	3	3	− 6	− 6
Boilers bursting	—	—	=	=
Inclined and engine planes	2	2	+ 1	+ 1
Railways, sidings, or tramways	8	8	+ 1	+ 1
Falling from ledges	13	13	+ 9	+ 9
Sundries	18	18	− 2	− 2
Total	**44**	**44**	=	=

The miscellaneous accidents inside the quarries show no sign of diminution. Thirteen out of the 44 fatal accidents were the result of falling from ledges.

The use of supporting ropes would have prevented some of these accidents, and it must be recollected that a fall of 8 or 9 feet is sometimes quite sufficient to inflict a fatal injury.

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Mr. Gerrard (*District No. 6*) insists upon the necessity of fencing the tops of quarries for the safety of the workpeople, and shows by an illustration how easily the precaution can be carried out.

The accidents on railways, &c., inside the quarries are classified in the Table below.

TABLE 87.

ACCIDENTS on RAILWAYS, SIDINGS, or TRAMWAYS.

Description.	No. of Fatal Accidents.	No. of Deaths.
INSIDE THE QUARRIES.		
When engaged in moving waggons	2	2
While engaged in coupling or uncoupling waggons	—	—
Run over while passing along or across railways or tramways.	3	3
Crushed between waggons or between waggons and structures.	—	—
In other ways...	3	3
Total	**8**	**8**

OUTSIDE THE QUARRIES.

The reason of the great diminution in the number of accidents outside the quarries has already been explained (page 90). The following Table gives particulars of the fatalities :—

TABLE 88.

ACCIDENTS OUTSIDE QUARRIES (at FACTORIES and WORKSHOPS connected with the QUARRIES, situated within a mile of them and belonging to the same OWNER).

Description.	No. of Fatal Accidents.	No. of Persons Killed.	Comparison with preceding Year.	
			Fatal Accidents.	Deaths.
Machinery	8	8	− 7	− 7
Hot liquid or molten metal or other substance in vat or pan.	—	—	− 1	− 1
Boiler explosions	1	1	+ 1	+ 1
Escape of gas, steam, or metal	—	—	=	=
Inclined and engine planes	—	—	− 4	− 4
Railways, sidings, or tramways	6	6	+ 1	+ 1
Miscellaneous	4	4	− 5	− 5
Total outside quarries	**19**	**19**	**− 15**	**− 15**

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Machinery.—In last year's report attention was called to numerous accidents in the process of making pressed bricks, and some of my remarks on the subject were quoted at length. It is true that this class of accidents now disappears from the reports of the Quarry Inspectors, because the brickworks adjacent to quarries have been transferred to the Factory Branch of the Home Office; but I take this opportunity of pointing out that the opinion which I expressed last year as to the possibility of preventing the accidents in making pressed bricks is confirmed. A few months ago I was pleased to see bricks being made in Sussex by machinery with automatic feed and automatic delivery, which does away with all chance of mutilated hands and fingers. The machinery has been imported from the United States, and combines additional safety with greater economy in manufacture, affording another instance of the ingenuity of our American cousins.

Boiler Explosions.—One boiler explosion occurred at a quarry in 1899; particulars are given in the following Table:—

TABLE 89.

No. of Board of Trade Report.	Name and Situation of Quarry.	Date of Explosion.	No. of Persons.		Kind of Boiler.	Nature of Explosion.	Cause of Explosion.
			Killed.	Injured.			
1,179 Formal Investigation.	Castlewellan Granite Quarries, Ballymagreehan, Co. Down.	28th Feb. 1899.	1	1	Ordinary vertical type, made entirely of iron.	Fire-box collapsed and ripped from top to bottom, and the boiler was projected a great distance by the outrush of steam	Explosion was due to the weakness of the fire-box, owing to corrosion and to its not being supported by any stays.

Railways, Sidings, or Tramways.—Particulars of these accidents are given in the following Table:—

TABLE 90.

ACCIDENTS on RAILWAYS, SIDINGS, or TRAMWAYS.

Cause of Accident.	No of Fatal Accidents.	No. of Deaths.
OUTSIDE THE QUARRIES.		
While engaged in moving waggons	—	—
While engaged in coupling or uncoupling waggons	—	—
Run over while passing along or across railways or tramways.	—	—
Crushed between waggons, or between waggons and structures.	3	3
In other ways...	3	3
Total	**6**	**6**

Miscellaneous.—Mr. Stokes (*District No. 8*) reports an accident from the explosion of an acetylene gas-holder at a brick-yard from a light being used while it was being emptied. Two persons were injured.

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The following table shows the death-rate from accidents of all kinds at quarries since the passing of the Quarries Act in 1894 :—

TABLE 91.

DEATH-RATE from ACCIDENTS at all the QUARRIES under the QUARRIES ACT.

YEAR.	Death-rate per 1,000 Persons Employed Inside the Quarries.	Death-rate per 1,000 Persons Employed Outside the Quarries.	Death-rate per 1,000 Persons Employed Inside and Outside the Quarries.
1895 ..	1·52	·39	·97
1896 ...	1·60	·60	1·10
1897 ...	1·58	·46	1·00
1898 ...	1·59	·47	1·00
1899 ...	**1·53**	**·56**	**1·19**

It will be noticed that the death-rate of persons employed *inside* quarries still remains high. It is higher than the corresponding rate among miners employed below ground in mines under the Coal Mines Act (1·37), and, what is worse, it shows no real sign of improvement ; the fluctuations during the past five years are so trifling, that the death-rate must be described as practically steady. No heed need be paid to the increase in the general death-rate this year. As explained on page 8, it is apparent, not real, and is due to the transfer to the Factory Branch of a number of *outside* works, in which the risks to life and limb are slight, compared with those encountered by the quarrier proper.

The death-rates for the different classes of quarries are given in the following table :—

TABLE 92.

DEATH-RATES from ACCIDENTS at QUARRIES, classified according to the kind of Mineral worked.

Kind of Mineral wrought.	Death-rate per 1,000 Persons Employed Inside the Quarries.			Death-rate per 1,000 Persons Employed Outside the Quarries.			Death-rate per 1,000 Persons Employed Inside and Outside the Quarries.		
	1897.	1898.	1899.	1897.	1898.	1899.	1897.	1898.	1899.
Chalk	1·65	1·88	1·52	·29	·26	1·02	·65	·67	1·38
Clay and brick earth	1·90	1·15	1·89	·31	·50	·74	·71	·66	1·65
Igneous rock	1·14	·97	1·43	·51	·32	·77	·92	·74	1·20
Iron ore	1·09	—	·48	3·72	—	—	1·69	—	·43
Limestone	1·15	1·77	1·46	·18	·64	·59	·86	1·41	1·23
Sandstone	1·41	2·24	1·63	·90	·48	·63	1·20	1·49	1·19
Slate	3·67	1·96	1·37	·15	·39	·15	1·70	1·09	·75
Other minerals, &c.	1·38	2·07	1·54	4·09	2·29	—	1·88	2·13	1·22
Total	1·58	1·59	**1·53**	·46	·47	**·56**	1·00	1·00	**1·19**

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SECTION 3.

Prosecutions.

The results of the prosecutions instituted by the Inspectors of Mines, the Procurators Fiscal in Scotland, and the Owners and Agents of mines and quarries are summed up in Tables 93 to 98.

TABLE 93.

PROSECUTIONS of OWNERS, AGENTS, and MANAGERS, for OFFENCES under the MINES ACTS.

Nature of Offence.	Prosecutions.	Convictions.	Cases withdrawn or not proven.	Cases dismissed.	Total Amount of Fines and Costs imposed £ s. d.
1. Employing boys, girls, or women at illegal hours or times of employment.	—	—	—	—	—
2. Paying wages at public-houses ...	—	—	—	—	—
3. Offences connected with check-weighers.	—	—	—	—	—
4. Neglecting rules as to registers, returns, notices, plans :					
Not keeping up registers	—	—	—	—	—
Not posting abstracts, notices, &c. ...	1	1	—	—	0 14 6
Not sending annual returns	1	1	—	—	1 0 0
Not sending statutory notices ...	2	2	—	—	9 0 0
Not keeping up plans...	4	4	—	—	3 16 1½
Not sending plans of abandoned mines.	2	2	—	—	6 17 0
5. Contraventions of general and special rules :					
Inadequate ventilation	6	3	2*	1	16 16 9
Not keeping up report books ...	8	8	—	—	7 7 0¼
Breaches of rules about safety lamps	1	1	—	—	9 0 6
Do. do. explosives...	2	2	—	—	3 9 6
Not providing proper signals ...	6	6	—	—	4 8 6
Do. do. manholes ...	5	3	—	2	38 7 0
Not securing roof and sides	1	1	—	—	1 10 0
Not fencing entrances to shafts ...	9	6	—	3	14 6 3
Not fencing machinery	1	1	—	—	5 0 0
Miscellaneous breaches of the general or special rules.	12	11	—	1	48 13 9
6. Not fencing shafts at abandoned mines	1	—	—	1†	—
7. Offences against Explosives Order ...	3	3	—	—	13 2 0
8. Other offences	4	3	—	1	12 0 0
Total for 1899	**69**	**58**	**2***	**9**	**195 8 10¾**
Ditto for preceding year ...	115	71	20	24	164 8 6

* Withdrawn on payment of costs. † Case taken to a higher Court.

This table shows that 58 out of 69 prosecutions, or 84 per cent., resulted in convictions. The average amount of fine and costs imposed was £3 7*s.* 5*d.* as compared with £2 6*s.* 4*d.* the preceding year, and £2 10*s.* 2*d.* in 1897.

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TABLE 94.

PROSECUTION of WORKMEN for OFFENCES under the MINES ACTS.

Nature of Offence.	Prosecutions.	Convictions.	Cases withdrawn.	Cases dismissed.	Total Amount of Fines and Costs imposed. £ s. d.
1. Obstructing airways or interfering with the ventilation.	15	15	—	—	16 19 0
2. Contraventions of rules about safety lamps:					
Unlocking a safety lamp or having a contrivance for unlocking.	14	14*	—	—	19 0 0
Using a damaged safety lamp...	4	4	—	—	4 4 6
Having a safety lamp near the swing of the pick.	2	2	—	—	1 6 6
Sleeping while in charge of a safety lamp ...	10	10	—	—	8 12 9
Miscellaneous	15	14	—	1	16 17 8
3. Contraventions of rules about matches and smoking:					
Having matches in his possession in the mine	37	37†	—	—	40 17 0
Having a pipe in his possession or smoking in the mine.	33	33‡	—	—	39 17 6
Having both pipe and matches in his possession in the mine.	10	10§	—	—	13 10 0
4. Contraventions of rules about explosives:					
Illegal thawing	—	—	—	—	—
Taking loose powder into the mine	3	3	—	—	3 11 6
Using insecure canisters	3	3	—	—	2 18 6
Unramming shots	11	10	—	1	15 12 6
Miscellaneous	31	31	—	—	32 9 1
5. Contraventions of rules about timber:					
Neglecting to set sprags	31	31	—	—	30 11 6
Neglecting to set props	7	7	—	—	8 12 6
Miscellaneous	7	6	—	1	9 14 6
6. Contraventions of rules about trams or tubs, or inclined and engine planes:					
Riding or allowing riding on trams and tubs	113	112	—	1	86 18 3
Drawing in front of tubs	3	3	—	—	1 17 6
Miscellaneous	30	30	—	—	29 11 0
7. Disobeying orders	29	26	1	2	25 2 6
8. Cruelty to animals...	15	13	2‖	—	17 12 6
9. Being about the mine in a state of intoxication	11	11	—	—	14 19 0
10. Miscellaneous	158	156¶	—	2	139 12 8
Total for 1899	**592**	**581**	**3**	**8**	**580 8 5**
Ditto for preceding year	674	649	1	24	654 0 8

* One offender was sentenced to 3 months' imprisonment.
† One offender was sentenced to 21 days' imprisonment.
‡ One offender was sentenced to 14 days' imprisonment, and another to 1 month's imprisonment.
§ Three offenders were sentenced to 14 days' imprisonment.
‖ Withdrawn on payment of costs.
¶ One offender was sentenced to 3 weeks' imprisonment with hard labour.

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There were 592 prosecutions of workmen, or 82 less than in 1898. The average fine and costs amounted to nearly £1, against £1 0*s.* 2*d.*, in the preceding year, and 19*s.* 8*d.* in 1897. In eight cases imprisonment was imposed without the option of a fine.

TABLE 95.

PROSECUTIONS of OWNERS, AGENTS, &c. for OFFENCES under the QUARRIES ACT.

Nature of Offence.	Prosecutions.	Convictions.	Cases withdrawn.	Cases dismissed.	Total Amount of Fines and Costs imposed.
					£ *s.* *d.*
1. Paying wages at public-houses	—	—	—	—	—
2. Neglecting rules as to returns and notices:					
Not sending annual returns	16	14	—	2	24 19 2
„ „ statutory notices	3	3	—	—	5 13 0
Sending a false return	—	—	—	—	—
3. Contraventions of Special Rules:					
Breaches of special rule about safety of quarry	5	4	—	1*	8 17 8
Breaches of „ „ „ explosives and blasting.	30	27	—	3†	58 14 9
Breaches of „ „ access to quarry	—	—	—	—	—
Breaches of „ „ „ machinery and plant.	10	8	1*	1*	16 1 6
Breaches of special rule about daily inspections and reports.	4	4	—	—	5 3 0
Miscellaneous breaches of special rules ...	3	2	—	1	3 3 0
4. Not posting up abstract of Act	10	10	—	—	16 11 0
5. Not posting up Special Rules	3	3	—	—	4 0 6
6. Not fencing top of quarry	—	—	—	—	—
Total for 1899	**84**	**75**	**1***	**8**	**143 3 7**
Ditto for preceding year	97	87	4	6	146 13 10

* On payment of costs. † On payment of costs in 2 cases.

There were 75 convictions, against 87 in 1898. The average amount of the fine and costs was £1 18*s.* 2*d.*, against £1 13*s.* 9*d.* in the previous year, and £1 4*s.* 2*d.* in 1897.

TABLE 96.

PROSECUTIONS of WORKMEN for OFFENCES under the QUARRIES ACT.

Nature of Offence.	Prosecutions.	Convictions.	Cases withdrawn.	Cases dismissed.	Total Amount of Fines and Costs imposed.
					£ *s.* *d.*
For breaches of Special Rules relating to explosives and blasting.	**19**	**17**	—	**2**	**11 12 0**
Preceding year	16	16	—	—	7 12 0

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TABLE 97.

PROSECUTIONS of OCCUPIERS of FACTORIES AND WORKSHOPS connected with MINES included under the METALLIFEROUS MINES ACT for OFFENCES against the FACTORY AND WORKSHOP ACTS.

Nature of Offence.	Prosecutions.	Convictions.	Cases withdrawn.	Cases dismissed.	Total Amount of Fines and Costs imposed.
					£ s. d.
1. Employing boys, girls, or women at illegal hours or times of employment.	4	4	—	—	2 0 0
2. Employing young persons without necessary certificates.	1	1	—	—	0 7 7½
3. Not fencing machinery	—	—	—	—	—
4. Not keeping up registers	1	1	—	—	0 7 7½
5. Not posting up Abstract of Act	1	1	—	—	0 7 7½
Total for 1899	**7**	**7**	—	—	**3 2 10½**
Ditto for preceding year	4	4	—	—	55 18 6

The average amount of the fine and costs was 9*s.* 0*d.*, compared with £13 19*s.* 7*d.* in 1898.

TABLE 98.

PROSECUTIONS of OCCUPIERS of FACTORIES AND WORKSHOPS connected with QUARRIES for OFFENCES against the FACTORY AND WORKSHOP ACTS.

Nature of Offence.	Prosecutions.	Convictions.	Cases withdrawn.	Cases dismissed.	Total Amount of Fines and Costs imposed.
					£ s. d.
1. Employing boys, girls, or women at illegal hours or times of employment.	—	—	—	—	—
2. Employing young persons without necessary certificates.	—	—	—	—	—
3. Not fencing machinery	1	—	—	1	—
4. Not keeping up registers	3	3	—	—	2 13 0
5. Not sending notices required by Act	—	—	—	—	—
6. Not fixing or properly filling up notices... ...	3	2	—	1	1 11 0
7 Miscellaneous offences	—	—	—	—	—
Total for 1899	**7**	**5**	—	**2**	**4 4 0**
Ditto for preceding year	51	51	—	—	76 4 8

The average amount of the fine and costs was 16*s.* 10*d.*, compared with £1 9*s.* 11*d.* in 1898, and £1 12*s.* 10*d.* in 1897.

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SECTION 4.

General Remarks.

EXPLOSIVES IN COAL MINES ORDERS AND SPECIAL TEST.

As explained at length in previous reports,* the Coal Mines Act of 1896 gives the Secretary of State power to prohibit the use of dangerous explosives in coal mines, and an official test of explosives has been instituted. The explosives which pass the test are placed upon what is known as the "Permitted List," and their use is thus sanctioned.

Your Order dated 24th July 1899 repealed the two Orders previously in force, *viz.*, the Explosives in Coal Mines Orders of the 11th July 1898, and of the 28th December 1898, and embodied their contents with some additions and alterations.

The changes were—

(1) The addition of a paragraph (No. 4) providing certain safeguards in relation to the storage and use of detonators.

(2) The addition of three new explosives, Benedite, Bulldog Brand Gunpowder, and Electronite No. 3, to the permitted list.

(3) The removal of Argus Powder from that list.

Your last Order dated 7th April 1900 adds two other explosives, *viz.*, Pit-ite and Stowmarket Gelignite to the permitted list.

In order to enable mine owners to ascertain which are the safer of the explosives in this list, which includes some which barely succeed in satisfying its conditions, you have been pleased to institute a Special Test which is far more severe than the first. The increased stringency is to be obtained in the following manner :—

(1) The charges to be fired will be larger.

(2) They will be fired in a more sensitive gaseous mixture.

(3) The required number of shots must be fired without any ignition of the gas.

(4) If an explosive fails to pass, no second trial will be allowed without the special sanction of the Secretary of State : except that in case of failure to pass by reason of incomplete detonation, a second trial will be allowed with such alteration in the method of firing or otherwise as the manufacturer may propose, if the alteration is not such as in the opinion of the Secretary of State constitutes a new explosive.

The precise conditions of the test are set forth in a printed memorandum.†

PREVENTION OF DUST.

One of the worst evils affecting some miners is the dusty atmosphere in which they work, and it is especially the man who is boring holes for blasting who is the sufferer. If the holes are pointed downwards, he can put in water and prevent any trouble; but when the holes are directed upwards, the pulverized rock drops out in the form of dust and some is so fine that it floats in the air, is inhaled and seriously affects the lungs. Where boring machines are employed the amount of dust produced is great, unless a jet of water is kept directed into the hole, and this precaution is very commonly neglected.

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* *Third Annual General Report upon the Mineral Industry for* 1896 [C.–8705], p. 57, and *General Report and Statistics for* 1897 [C.–9049], p. 105.

† *Explosives in Coal Mines—Special Test Memorandum*, Home Office, 18th October 1899.

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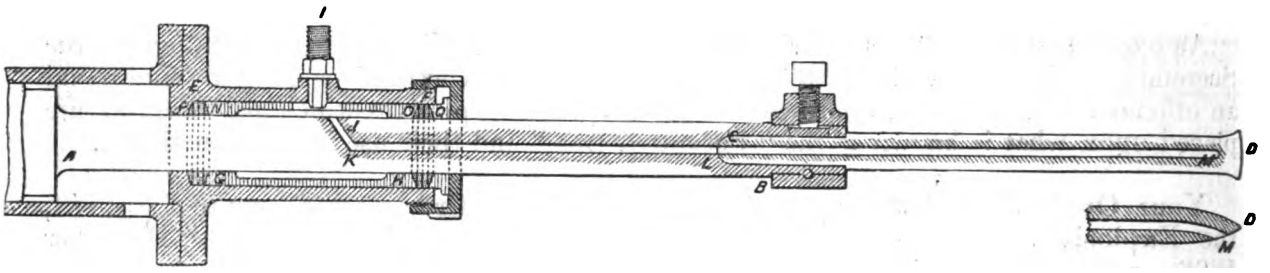
Any method of preventing the noxious stone dust must necessarily tend to render the miner's occupation healthier, or in other words to lengthen his life. I consequently have no hesitation in directing the attention of Mining Companies to Bornet's system of continually flushing the hole with water, which I saw for the first time at the Paris Exhibition, though the appliance has been in use in France for several years.

Fig. 10.



In fig. 10, which represents the front part of Bornet's electric percussion boring machine, A B is the piston rod prolonged to form the tool-holder, and C D is the striking chisel or drill. E F is a box attached to the cylinder of the machine, with a brass lining G H surrounding the piston rod; the lining has a long annular groove forming a space into which water is constantly forced from a hose screwed on at I. J K L is a long central passage in the piston rod, leading into a similar hole L M in the drill. As long as J is travelling between N and O, water runs from J to M, and flushes out the chips and powder formed by the blows of the chisel edge D upon the bottom of the hole. No dust incommodes the miner, and the drill strikes a fairer blow. P and Q are leather washers. Reports from the Anzin Collieries, show that the gain in speed is very considerable; indeed in hard sandstone, Bornet's appliance caused the speed of boring to be doubled.

The invention commends itself by combining increased efficiency with better hygienic conditions, and as the appliance can be fitted at a very small cost to any boring machine, there is no longer the slightest excuse for allowing men to work in a cloud of dust.

Workmen's Compensation Act.

This Act appears to be working well, and Mr. Hall (*District No. 7*) points out that the insurance companies have reduced their premiums very considerably. Instead of asking 2 per cent. of the total amount paid in wages as they did originally, the rate is now reduced in his district to about 22*s.* or 1·1 per cent.; which represents about ½*d.* per ton of coal.

Mr. Stokes (*District No. 8*) calculates that the actual amount paid for compensation in his district represents only ¼*d.* per ton of coal raised.

Mr. Ronaldson (*District No. 2*) mentions that most accidents are now investigated in his district by the Inspector of the Mine Owners' Insurance Company with very beneficial results.

Ambulance Classes.

Good work continues to be done by ambulance classes in various mining and quarrying localities.

Home Office,

1st August, 1900.

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APPENDIX I.

HOME OFFICE, WHITEHALL,
9th August, 1899.

SIR,

I am directed by the Secretary of State to say that he views with concern the large number of accidents which are caused every year by falls of roof and side in mines. As you are no doubt aware this is the most fruitful source of accident in mines. In 1898, an average year in this respect, 431 out of the 908 deaths from accident in coal mines, or 47·4 per cent., were caused by falls of ground. In 1897 the proportion was even higher, viz., 480 out of 930 deaths, or 51·6 per cent. Moreover, this class of accident, as judged by the death-rate, *i.e.*, the proportion of deaths to the number of persons employed, shows at present no tendency to diminish; while there was a great reduction in the death rate from falls in the years immediately following the passing of the Coal Mines Regulation Act, 1887, there has, generally speaking, been no appreciable improvement since 1892.

It appears to the Secretary of State that the subject is one which calls for general action on the part of colliery owners throughout the country, and that the present condition of things cannot be suffered to continue without a serious effort being made to remedy it. He has made enquiry into the practice prevailing in the different districts for preventing such accidents, and he observes with satisfaction that, with a view to giving full effect to the general requirements on the subject contained in the Coal Mines Act (Rules 21 and 22) and where necessary supplementing them, many owners have by Special Rules or otherwise laid down in detail precautions which are to be observed by the mine officials and the miners in regard to the timbering of mines. For example, in a number of places Special Rules have been adopted requiring that props or other supports for the roof and sides shall be set in the working places at regular intervals, the distance which may not be exceeded between them being specified for each particular seam; that sprags also shall be regularly set; and that the timber shall be supplied by the management in the actual working places of the miners.

The Secretary of State learns that an improvement is observable in the districts in which these precautions have been most generally adopted, and he is of opinion that the universal adoption of similar rules would result in a general decrease in the number of accidents. He desires accordingly to impress upon owners of collieries the importance of their taking action in the matter.

He has consulted with the Mines Inspectors as to the precautions which may be recommended for general adoption, and they have agreed upon the following:—

(i.) A supply of suitable timber should be kept ready for use in *each working place*. The importance of this precaution is now generally recognised. It is in force already in many places with satisfactory results.

(ii.) Increased supervision by the mine officials and stricter enforcement of rules and instructions are necessary. In the first place, more frequent inspection of the parts where persons work or pass should be made during shifts by the officials of the mine, with the view of detecting dangerous parts of roof or side. Again, many accidents are caused by delay on the part of the miner himself to set the props or sprags which are necessary for securing his working place, and more supervision by the officials is necessary to enforce observance of the rules upon this subject. It is specially important that the officials should themselves see that any instructions which they may give for securing the working places are actually carried out.

(iii.) Many accidents which now occur during the drawing of timber would be obviated if the use of the "ringer and chain," "dog and chain," or other similar device, such as are already in use in many districts, were made compulsory.

(iv.) The precaution, however, which the Inspectors consider of the greatest importance is the systematic timbering and spragging of the working places. The question of when and where sprags or props should be set is one which in their opinion should not be left entirely to the judgment of the individual miner; while he should be free to put up additional props when he considers them required, he should have no discretion to omit the setting of props altogether, or to exceed a fixed maximum distance between them. Experience shows that a large proportion of the accidents occur from falls of roof in which no fault or slip could previously be observed, and this source of danger can only be effectively met, and the roof and sides and working face actually made secure, by the timbering being done systematically; the Manager specifying for every seam or district of a seam in the mine under his control the *maximum* distance apart at which the props, sprags, and other supports may be fixed in the working places, and the instructions when given being strictly enforced. This is the practice, as has already been mentioned, in some collieries, and it is in the unanimous opinion of the Inspectors of Mines of the highest importance.

It will eventually be desirable, the Secretary of State thinks, to embody these or similar precautions in special rules. In the first instance, however, he is anxious that Owners, Agents, and Managers of Collieries should be placed in possession of his views, and should give the matter special consideration; and he feels sure he may count upon their co-operation in the attempt to bring about a diminution in the yearly mortality among miners from this cause.

I am, &c.,

KENELM E. DIGBY.

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APPENDIX II.

LIST OF

FIRST CLASS CERTIFICATES OF COMPETENCY AS MANAGERS

GRANTED DURING THE YEAR 1899.*

Name.	District in which Examined.	Date of Certificate.	Number of Certificate.
Addie, John	East Scotland	16 June 1899	1,515
Agnew, Samuel	East Scotland	16 June „	1,516
Bassett, David	South Wales	25 May „	1,491
Bateman, Joseph	Midland	18 November „	1,600
Beamand, John	South Western	22 September „	1,596
Bell, George	Yorkshire and Lincolnshire	30 August „	1,594
Bell, John William Douglas	Yorkshire and Lincolnshire	30 August „	1,567
Bexton, Richard	Yorkshire and Lincolnshire	30 August „	1,570
Birrell, Robert	East Scotland	16 June „	1,517
Black, Ernest Douglas	Yorkshire and Lincolnshire	30 August „	1,579
Black, William	East Scotland	16 June „	1,518
Blight, Percival Henry Soper	Yorkshire and Lincolnshire	30 August „	1,581
Bonar, James	West Scotland	30 December „	1,610
Bridges, Sydney John	Yorkshire and Lincolnshire	30 August „	1,557
Brown, David	East Scotland	16 June „	1,519
Brown, Thomas	Manchester	10 January 1900	1,625
Brown, William	Yorkshire and Lincolnshire	30 August 1899	1,559
Bumpstead, William	Yorkshire and Lincolnshire	30 August „	1,575
Burne, Cecil Alfred	Durham	2 September „	1,582
Chant, Charles Beck	Yorkshire and Lincolnshire	30 August „	1,576
Christie, George Shearer	East Scotland	16 June „	1,520
Clark, George	East Scotland	16 June „	1,521
Clark, Nathaniel Jocelyn	Durham	2 September „	1,589
Clarke, William Wentworth	Yorkshire and Lincolnshire	30 August „	1,572
Cooper, Joseph Oxley	Manchester	10 January 1900	1,626
Corden, Joseph Hargreaves	Durham	2 September 1899	1,587
Coxon, Samuel George	Newcastle	6 March „	1,476
Coxon, William Bilton	Newcastle	6 March „	1,477
Curley, James	East Scotland	16 June „	1,522
Curry, James William	Newcastle	6 March „	1,478
Danks, Francis	East Scotland	16 June „	1,523
Davies, Daniel	South Wales	25 May „	1,492
Davies, David James	South Wales	25 May „	1,493
Davies, Herbert	South Wales	25 May „	1,494
Davies, John	South Wales	25 May „	1,495
Davies, Pryce	South Wales	25 May „	1,496
Dixon, Thomas Henry	Yorkshire and Lincolnshire	30 August „	1,558

* Including the names of successful candidates who passed in the Manchester District Examination held late in December, 1899.

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Name.	District in which Examined.	Date of Certificate.	Number of Certificate.
Donnelly, James	Manchester	10 January 1900	1,627
Dover, Thomas William	Liverpool	22 June 1899	1,554
Dunlop, Archibald	West Scotland	30 December „	1,611
Dyke, William Frederick	South Western	22 September „	1,598
Eccles, Robert	Manchester	10 January 1900	1,628
Edwards, William	Manchester	10 January „	1,629
Elce, Abraham, junr.	Manchester	10 January „	1,630
Ensor, John	Manchester	10 January „	1,631
Evans, George Morgan	South Wales	25 May 1899	1,497
Farmer, George	Yorkshire and Lincolnshire	30 August „	1,571
Fawcett, Edward Stoker	Newcastle	6 March „	1,479
Fawcett, William Coulson	Durham	2 September „	1,593
Fisher, Gathorne	East Scotland	16 June „	1,524
Forestier-Walker, Charles Evelyn ...	South Wales	25 May „	1,514
Freeland, Robert Munro	East Scotland	16 June „	1,525
Gemmell, David Chalmers	East Scotland	16 June „	1,526
German, George Joseph	Yorkshire and Lincolnshire	30 August „	1,573
Gibb, Robert	South Wales	25 May „	1,498
Gibson, John	West Scotland	30 December „	1,612
Gill, Sidney	Yorkshire and Lincolnshire	30 August „	1,568
Gillespie, Thomas Ritchie	West Scotland	30 December „	1,613
Grant, Alexander	East Scotland	16 June „	1,527
Greensmith, Vernon	Midland	18 November „	1,601
Hancock, John Gething	Midland	18 November „	1,602
Hargreaves, Thomas	Yorkshire and Lincolnshire	30 August „	1,566
Harris, Harry Percy	Manchester	10 January 1900	1,632
Hewitt, John	Manchester	10 January „	1,633
Horne, Thomas	East Scotland	16 June 1899	1,528
Hunter, William	West Scotland	30 December „	1,614
Husband, Thomas	South Wales	25 May „	1,499
Hutchinson, William	Yorkshire and Lincolnshire	30 August „	1,565
Jackson, Hilton Booth	Manchester	10 January 1900	1,634
Jackson, James Harold	Manchester	10 January „	1,635
Jackson, William	West Scotland	30 December 1899	1,615
Johnstone, Andrew	West Scotland	30 December „	1,616
Jones, Edwin Fiske-	South Western	22 September „	1,597
Jones, John	South Wales	25 May „	1,500
Jones, Percy Howard...	Manchester	10 January 1900	1,636
Jones, St. Vincent Champion ...	Manchester	10 January „	1,637
Jones, Silvanas...	South Wales	25 May 1899	1,505
Jones, S. Carey	South Wales	25 May „	1,504
Jones, William...	Durham	2 September „	1,585
Kean, John S.	East Scotland	16 June „	1,529
Kearton, Christopher, junr.	East Scotland	16 June „	1,530
Kirkby, William	Newcastle	6 March „	1,480
Laird, Joseph	West Scotland	30 December „	1,617
Lathbury, Graham Campbell ...	Liverpool	22 June „	1,555
Latimer, Hugh...	Durham	2 September „	1,591
Lees, Scott	West Scotland	30 December „	1,618
Lewis, Penry A.	South Wales	25 May „	1,506

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Name.	District in which Examined.	Date of Certificate.	Number of Certificate.
Longden, Geoffrey Appleby	Midland	18 November 1899	1,603
Longridge, John	Yorkshire and Lincolnshire	30 August „	1,577
Marsh, Anthony	Durham	2 September „	1,592
Martin, Alexander Currie	East Scotland	16 June „	1,535
McCabe, Charles Henry	South Wales	25 May „	1,501
McCall, Alexander	East Scotland	16 June „	1,531
McCulloch, Andrew	West Scotland	30 December „	1,619
McIntosh, John	East Scotland	16 June „	1,532
McNaughton, John	East Scotland	16 June „	1,533
McPhail, John	East Scotland	16 June „	1,534
Middleton, James	East Scotland	16 June „	1,536
Mitton, Henry Eustace	Manchester	10 January 1900	1,638
Mullins, William	Yorkshire and Lincolnshire	30 August 1899	1,578
Nisbet, Hugh B.	East Scotland	16 June „	1,537
Parrington, Thomas Elliot	Durham	2 September „	1,583
Parsons, William	South Staffordshire	20 January „	1,474
Partridge, Richard Crawshay Bailey	Manchester	10 January 1900	1,639
Paterson, John	West Scotland	30 December 1899	1,620
Paton, Augustus Hugh Morrison ...	East Scotland	16 June „	1,538
Peace, Frank Kenworthy	Manchester	10 January 1900	1,640
Peile, John	South Wales	25 May 1899	1,502
Perkin, Herbert	Newcastle	6 March „	1,481
Phillips, William Edward	South Western	22 September „	1,599
Pitt, George Norman Ackroyd ...	Yorkshire and Lincolnshire	30 August „	1,556
Povey-Harper, Frederick	Durham	2 September „	1,595
Powell, John	South Wales	25 May „	1,503
Pritchard, Richard Gerald Mauncell	Yorkshire and Lincolnshire	30 August „	1,561
Protheroe, David Thomas	Yorkshire and Lincolnshire	30 August „	1,564
Railton, Albert Frederick	South Wales	25 May „	1,507
Ratcliff, Percy	Midland	18 November „	1,604
Reah, Glanville	Yorkshire and Lincolnshire	30 August „	1,574
Rees, Benjamin Owen	South Wales	25 May „	1,508
Rhodes, Harry	Newcastle	6 March „	1,482
Richardson, Melville Dalyell Radford	Midland	18 November „	1,605
Robertson, Archibald Gray	East Scotland	16 June „	1,540
Robinson, Francis Kildale	Midland	18 November „	1,606
Robinson, Robert George Fox ...	Midland	18 November „	1,607
Robson, Thomas William	Durham	2 September „	1,586
Roden, James	East Scotland	16 June „	1,539
Rogers, Daniel, junr.	South Staffordshire	20 January „	1,473
Sample, James Bertram	Newcastle	6 March „	1,483
Scott, Walter Robert	Durham	2 September „	1,584
Scott, William Robert	South Wales	25 May „	1,509
Scoular, Alexander Carlaw	Newcastle	6 March „	1,484
Seaman, Thomas	Manchester	10 January 1900	1,641
Sharp, Walter	South Staffordshire	20 January 1899	1,472
Shaw, George, junr.	Yorkshire and Lincolnshire	30 August „	1,560
Shearer, Lewis McEwan	West Scotland	30 December „	1,621
Simmons, William	East Scotland	16 June „	1,541
Simpson, Robert	East Scotland	16 June „	1,542
Simpson, Robert Rowell	Newcastle	6 March „	1,485
Smith, John	Manchester	10 January 1900	1,642
Snowdon, Thomas	Newcastle	6 March 1899	1,486
Southern, Stephen	East Scotland	16 June „	1,543
Stephenson, John	Yorkshire and Lincolnshire	30 August „	1,569
Stewart, William	East Scotland	16 June „	1,544

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Name.	District in which Examined.	Date of Certificate.	Number of Certificate.
Strickland, Daniel	East Scotland	16 June 1899	1,545
Swindle, Jackson	Yorkshire and Lincolnshire	30 August „	1,580
Tansley, Francis Henry	Manchester	10 January 1900	1,643
Telfer, Henry, junr.	East Scotland	16 June 1899	1,546
Thomas, David...	South Wales	25 May „	1,510
Thomas, Evan Powell	South Wales	25 May „	1,511
Thomas, Frank Harold	Midland	18 November „	1,608
Thomas, John	South Wales	25 May „	1,512
Thomas, Lewis	South Wales	25 May „	1,513
Thomas, William	Newcastle	6 March „	1,487
Thompson, Joseph	East Scotland	16 June „	1,548
Thomson, Andrew	East Scotland	16 June „	1,547
Tickle, John Joseph, junr.	Manchester	10 January 1900	1,644
Treece, Ernest Frederick	Midland	18 November 1899	1,609
Tweddell, George	Newcastle	6 March „	1,488
Walker, Charles	East Scotland	16 June „	1,549
Watson, James...	West Scotland	30 December „	1,622
Weir, Francis Dickie	West Scotland	30 December „	1,623
Weir, James Chapman	East Scotland	16 June „	1,550
West, David Arnold	Newcastle	6 March „	1,489
White, John	East Scotland	16 June „	1,551
Widdas, Percy	Durham	2 September „	1,588
Willis, Edward Turnley	Yorkshire and Lincolnshire	30 August „	1,562
Wilson, James	Newcastle	6 March „	1,490
Wilson, John	East Scotland	16 June „	1,552
Wilson, John	West Scotland	30 December „	1,624
Wilson, William	East Scotland	16 June „	1,553
Young, William	Manchester	10 January 1900	1,645

LIST OF

SECOND CLASS CERTIFICATES OF COMPETENCY AS UNDER-MANAGERS.

GRANTED DURING THE YEAR 1899.*

Name.	District in which Examined.	Date of Certificate.	Number of Certificate.
Adam, Alexander	East Scotland	16 June 1899	3,704
Adams, Fred	Yorkshire and Lincolnshire	30 August „	3,820
Aitchison, Malcolm	West Scotland	30 December „	3,885
Aldred, Robert, jun.	Midland	18 November „	3,865
Allen, George	South Wales	25 May „	3,641
Allen, Joseph	South Staffordshire	20 January „	3,616
Andrews, Samuel	South Wales	25 May „	3,642
Armstrong, Samuel	East Scotland	16 June „	3,705
Arundel, William	Yorkshire and Lincolnshire	30 August „	3,824

* Including the names of successful candidates who passed in the Manchester District Examination held late in December, 1899.

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Name.	District in which Examined.	Date of Certificate.	Number of Certificate.
Barclay, Alexander	East Scotland	16 June 1899	3,706
Barker, Thomas	Midland	18 November „	3,866
Barlow, Samuel	Midland	18 November „	3,867
Bates, Robert	East Scotland	16 June „	3,707
Baxter, Andrew	East Scotland	16 June „	3,708
Beard, Owen	Yorkshire and Lincolnshire	30 August „	3,822
Beaumont, Joseph	Manchester	10 January 1900	3,895
Beeton, Sampson	Midland	18 November 1899	3,868
Belford, Thomas	Manchester	10 January 1900	3,896
Bell, Thomas	East Scotland	16 June 1899	3,709
Bellin, William Henry	South Wales	25 May „	3,643
Benton, Richard	South Staffordshire	20 January „	3,615
Bevan, Evan	South Wales	25 May „	3,644
Biggs, John George	Durham	2 September „	3,845
Bircumshaw, Joseph	Yorkshire and Lincolnshire	30 August „	3,813
Black, David	East Scotland	16 June „	3,710
Blacker, Henry	Liverpool	22 June „	3,784
Bogie, James	East Scotland	16 June „	3,711
Booth, Frederick	Yorkshire and Lincolnshire	30 August „	3,821
Booth, William Sykes...	East Scotland	16 June „	3,713
Bonar, Robert	East Scotland	16 June „	3,712
Bowen, William	South Wales	25 May „	3,645
Brabban, Dixon	Newcastle	6 March „	3,618
Brady, James	Manchester	10 January 1900	3,897
Bray, William Matthews	South Western	22 September 1899	3,854
Broackes, Edward William	South Wales	25 May „	3,646
Brough, Jonathan	Manchester	10 January 1900	3,898
Brown, Alexander	East Scotland	16 June 1899	3,714
Brown, William	West Scotland	30 December „	3,886
Brown, William	Midland	18 November „	3,869
Buchanan, Robert	West Scotland	30 December „	3,887
Buffton, Thomas Hopkin	South Wales	25 May „	3,647
Bullough, John	Liverpool	22 June „	3,785
Caldwell, Joseph	Manchester	10 January 1900	3,899
Calow, Albert John	Yorkshire and Lincolnshire	30 August 1899	3,816
Chalmers, John	West Scotland	30 December „	3,888
Chambers, Stewart	East Scotland	16 June „	3,715
Chapman, Richard	Manchester	10 January 1900	3,900
Charles, William Henry	South Wales	25 May 1899	3,648
Chicken, John Robinson	Newcastle	6 March „	3,619
Christie, Thomas Train	Manchester	10 January 1900	3,901
Christopher, William	South Wales	25 May 1899	3,649
Clark, William	East Scotland	16 June „	3,716
Clarke, Thomas	Manchester	10 January 1900	3,902
Clarkson, Samuel	East Scotland	16 June 1899	3,717
Cleland, Daniel	East Scotland	16 June „	3,718
Clemenson, John	East Scotland	16 June „	3,719
Clifford, John	East Scotland	16 June „	3,720
Cockburn, Edmund	Yorkshire and Lincolnshire	30 August „	3,809
Cockburn, John	Newcastle	6 March „	3,620
Combey, William	Newcastle	6 March „	3,621
Cook, Cuthbert...	Newcastle	6 March „	3,622
Cork, Frederick Lawerence	Midland	18 November „	3,870
Corless, Robert William	Manchester	10 January 1900	3,903
Coyle, George	Liverpool	22 June 1899	3,786
Crichton, James	West Scotland	30 December „	3,889
Curry, Thomas	Durham	2 September „	3,846
Daglish, Francis	Midland	18 November „	3,871
Dakers, Herbert Hugh	Durham	2 September „	3,841
Dalgleish, James	East Scotland	16 June „	3,721
Davidson, Alexander	East Scotland	16 June „	3,722
Davies, Benjamin	South Wales	25 May „	3,650
Davies, David	South Wales	25 May „	3,651
Davies, Joan	South Wales	25 May „	3,653
Davies, Joshua...	South Wales	25 May „	3,654

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Name.	District in which examined.	Date of Certificate.	Number of Certificate.
Davies, Morgan	South Wales	25 May 1899	3,655
Davies, Samuel	South Wales	25 May „	3,656
Davies, Thomas Greenland	South Wales	25 May „	3,652
Davies, William	South Wales	25 May „	3,657
Dickson, Charles	Manchester	10 January 1900	3,904
Dobson, Thomas	North Staffordshire	6 July 1899	3,802
Donaldson, Robert	East Scotland	14 June „	3,723
Douglas, David Baird	Midland	18 November „	3,872
Draper, William	Midland	18 November „	3,873
Dryburgh, William	East Scotland	16 June „	3,724
Dyer, Thomas	East Scotland	16 June „	3,725
Edwards, Samuel	South Wales	25 May „	3,658
Ellam, Alfred	Yorkshire and Lincolnshire	30 August „	3,823
Elliot, Edward Morriss	Newcastle	6 March „	3,623
Ellis, Joseph	Manchester	10 January 1900	3,905
Elvin, William...	Midland	18 November 1899	3,874
English, William	Durham	2 September „	3,826
Evans, Evan	South Western	22 September „	3,864
Evans, Philip	South Wales	25 May „	3,659
Evans, Thomas...	South Wales	25 May „	3,660
Evans, Thomas...	South Wales	25 May „	3,661
Everett, Morgan	South Wales	25 May „	3,662
Farmer, Joseph	Midland	18 November „	3,875
Fell, John James	Durham	2 September „	3,848
Finlay, Thomas	Durham	2 September „	3,850
Ferguson, Thomas	West Scotland	30 December „	3,890
Fisher, John Thomas	Yorkshire and Lincolnshire	30 August „	3,806
Fivey, Thomas Carlyle	East Scotland	16 June „	3,727
Fleming, George	North Staffordshire	6 July „	3,797
Fleming, William	East Scotland	16 June „	3,726
Fletcher, Thomas Trueman	Durham	2 September „	3,836
Forster, Frank	Newcastle	6 March „	3,624
Francis, Edward	South Wales	25 May „	3,663
Gallagher, Patrick	Durham	2 September „	3,838
Gallaher, William	East Scotland	16 June „	3,728
George, Charles	East Scotland	16 June „	3,729
Glover, Aaron	Liverpool	22 June „	3,787
Glover, Matthew, jun.	West Scotland	30 December „	3,891
Godderidge, John Ison	South Staffordshire	20 January „	3,612
Graham, Adam...	East Scotland	16 June „	3,730
Grainger, Herbert	North Staffordshire	6 July „	3,804
Green, Alfred John	South Wales	25 May „	3,664
Greig, James	East Scotland	16 June „	3,731
Grierson, William	East Scotland	16 June „	3,732
Griffiths, Joseph	South Wales	25 May „	3,665
Grundy, Henry	Liverpool	22 June „	3,788
Hall, John Thomas	Newcastle	6 March „	3,625
Hamilton, Robert	East Scotland	16 June „	3,733
Handyside, William	Newcastle	6 March „	3,626
Hardie, John	East Scotland	16 June „	3,734
Hardwick, Myles Winson	Midland	18 November „	3,876
Hardy, Herbert	Manchester	10 January 1900	3,906
Hargreaves, Arthur	Yorkshire and Lincolnshire	30 August 1899	3,811
Harris, Henry	South Wales	25 May „	3,666
Hasson, Robert...	West Scotland	30 December „	3,892
Heel, Joseph	Newcastle	6 March „	3,627
Hinchliffe, Robert	Yorkshire and Lincolnshire	30 August „	3,812
Hodgson, John James	Durham	2 September „	3,828
Hodgson, Joseph	Durham	2 September „	3,835

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Name.	District in which Examined.	Date of Certificate.	Number of Certificate.
Housley, George	Manchester	10 January 1900	3,907
Hudson, Harold	Newcastle	6 March 1899	3,628
Hughes, John George	Manchester	10 January 1900	3,908
Hughes, Thomas	South Wales	25 May 1899	3,667
Hunter, Alexander	East Scotland	16 June "	3,735
Hunter, John	Newcastle	6 March "	3,629
Hunter, Robert Simpson	East Scotland	16 June "	3,736
James, William	South Wales	25 May "	3,668
Jarman, Benjamin	South Western	22 September "	3,858
Jennings, Alfred	Midland	18 November "	3,877
John, David	South Western	22 September "	3,863
Johnstone, James	East Scotland	16 June "	3,737
Jones, Alfred Rhys	South Wales	25 May "	3,669
Jones, David John	Midland	18 November "	3,878
Jones, Erasmus	South Wales	25 May "	3,670
Jones, Evan Arthur	South Wales	25 May "	3,671
Jones, Giles	South Wales	25 May "	3,672
Jones, Henry	South Wales	25 May "	3,673
Jones, John Griffiths	South Wales	25 May "	3,676
Jones, John Hugh	South Wales	25 May "	3,674
Jones, Thomas John	South Wales	25 May "	3,675
Jones, Watkin	South Wales	25 May "	3,677
Kay, John Reid	East Scotland	16 June "	3,738
Kershaw, Robert	Liverpool	22 June "	3,789
Kirkham, William	South Staffordshire	20 January "	3,614
Knox, Henry	East Scotland	16 June "	3,739
Laird, Robert	East Scotland	16 June "	3,740
Lanyon, William George	East Scotland	16 June "	3,741
Lawton, Ralph	Manchester	10 January 1900	3,909
Leckie, Samuel	East Scotland	16 June 1899	3,742
Leo, William Joseph Don	Yorkshire and Lincolnshire	30 August "	3,810
Lewis, Frederick	South Wales	25 May "	3,678
Lewis, Lewis Richard	South Wales	25 May "	3,679
Lewis, Thomas	South Wales	25 May "	3,680
Lithgow, Thomas, jun.	East Scotland	16 June "	3,743
Longdon, Albert	Midland	18 November "	3,879
Lowe, Thomas, jun.	North Staffordshire	6 July "	3,803
Lyle, Alexander	East Scotland	16 June "	3,744
Maggs, Edward	South Western	22 September "	3,862
McCallum, Thomas	East Scotland	16 June "	3,745
McCarthy, Michael Dodds	Durham	2 September "	3,842
McDowell, Robert	West Scotland	30 December "	3,893
McGhee, Hugh	East Scotland	16 June "	3,746
McIlwraith, William	East Scotland	16 June "	3,747
McKay, Robert	East Scotland	16 June "	3,748
Mackie, William	East Scotland	16 June "	3,749
McPhail, Angus	East Scotland	16 June "	3,783
McPhail, William	East Scotland	16 June "	3,750
Maltby, Stephen Alexander	Midland	18 November "	3,880
Martin, Allan O.	East Scotland	16 June "	3,751
Masterton, John	Durham	2 September "	3,844
Meikle, Henry, jun.	East Scotland	16 June "	3,752
Miles, Thomas Ephraim	South Wales	25 May "	3,681
Milburn, William James	Newcastle	6 March "	3,630
Millar, Andrew	East Scotland	16 June "	3,753

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Name.	District in which Examined.	Date of Certificate.	Number of Certificate.
Miller, James	East Scotland	16 June 1899	3,754
Morgan, Thomas	South Wales	25 May „	3,682
Morgan, Thomas	South Wales	25 May „	3,683
Morgan, William	South Wales	25 May „	3,684
Morgan, William E.	South Wales	25 May „	3,685
Morris, John	South Wales	25 May „	3,686
Morland, Thomas	Newcastle	6 March „	3,631
Morse, Arnold Harry	South Staffordshire	20 January „	3,617
Morton, Andrew	East Scotland	16 June „	3,755
Munro, Hector	East Scotland	16 June „	3,756
Nelson, Cornelius	Yorkshire and Lincolnshire	30 August „	3,817
Newlands, George, jun.	East Scotland	16 June „	3,757
Newman, Joseph	Durham	2 September „	3,852
Nixon, Robert	Manchester	10 January 1900	3,910
Ogilvie, Robert	East Scotland	16 June 1899	3,758
Ogilvie, William	East Scotland	16 June „	3,759
Oxley, William	Newcastle	6 March „	3,632
Palmer, William	South Wales	25 May „	3,687
Park, Kelso Ballantine	East Scotland	16 June „	3,760
Parkin, Thomas Wakefield	Newcastle	6 March „	3,633
Parmley, William	Durham	2 September „	3,834
Patterson, Robert John	Durham	2 September „	3,831
Peyling, Quinn	Manchester	10 January 1900	3,911
Paarson, James	East Scotland	16 June 1899	3,761
Pickford, James	Durham	2 September „	3,827
Potts, James	Durham	2 September „	3,833
Powell, W. H., jun.	South Wales	25 May „	3,688
Pratt, Miles	Durham	2 September „	3,829
Price, David	South Wales	25 May „	3,689
Price, George	South Staffordshire	20 January „	3,613
Provan, Joseph	East Scotland	16 June „	3,762
Raine, George Henry	Durham	2 September „	3,853
Rattray, James	East Scotland	16 June „	3,763
Redpath, Robert Ashmore	Newcastle	6 March „	3,634
Reed, John Thomas	Durham	2 September „	3,847
Rees, John	South Wales	25 May „	3,690
Rees, Richard E.	South Wales	25 May „	3,691
Reid, Henry	East Scotland	16 June „	3,764
Renshaw, Edward	Midland	18 November „	3,881
Reynolds, Francis Tudor	South Western	22 September „	3,860
Rigg, Thomas	East Scotland	16 June „	3,765
Roberts, Thomas	South Wales	25 May „	3,692
Robinson, Thomas Lee	Newcastle	6 March „	3,635
Roebuck, Samuel	Yorkshire and Lincolnshire	30 August „	3,815
Ross, John	East Scotland	16 June „	3,766
Rothwell, Alfred	Liverpool	22 June „	3,790
Rowe, William	Durham	2 September „	3,843
Rylance, Joseph	Liverpool	22 June „	3,791
Sage, Joseph	South Western	22 September „	3,856
Salt, William Griffiths	North Staffordshire	6 July „	3,801
Saxton, John	Manchester	10 January 1900	3,912

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Name.	District in which Examined.	Date of Certificate.	Number of Certificate
Scobie, Walter	East Scotland	16 June 1899	3,767
Scott, John	East Scotland	16 June „	3,768
Senior, John Henry	Yorkshire and Lincolnshire	30 August „	3,808
Seymour, Albert Thomas	South Western	22 September „	3,861
Sharp, Archibald	East Scotland	16 June „	3,769
Sherwin, James	Liverpool	22 June „	3,792
Shute, Robert Ashley	Yorkshire and Lincolnshire	30 August „	3,814
Simm, John Thomas	Liverpool	22 June „	3,793
Simmonds, Tom	South Western	22 September „	3,857
Simpson, John	East Scotland	16 June „	3,770
Sloss, Alexander	East Scotland	16 June „	3,771
Smailes, John	Durham	2 September „	3,849
Smith, John William	Liverpool	22 June „	3,794
Smith, Joseph	Newcastle	6 March „	3,636
Smith, Thomas	Newcastle	6 March „	3,637
Smith, William	North Staffordshire	6 July „	3,800
Sneddon, Alexander	East Scotland	16 June „	3,772
Sorley, James	East Scotland	16 June „	3,773
Southworth, William	Liverpool	22 June „	3,795
Spence, John	East Scotland	16 June „	3,774
Stansfield, William	Durham	2 September „	3,839
Stewart, Rees	South Western	22 September „	3,855
Stewart, Robert	East Scotland	16 June „	3,775
Stobart, Ralph	Newcastle	6 March „	3,638
Strachan, James	Durham	2 September „	3,832
Strachan, John	East Scotland	16 June „	3,776
Sunter, John	Durham	2 September „	3,851
Taylor, Herbert William	Durham	2 September „	3,825
Taylor, John	Manchester	10 January 1900	3,913
Taylor, Richard	Newcastle	6 March 1899	3,639
Thomas, Dan Walter	South Wales	25 May „	3,693
Thomas, Richard	South Wales	25 May „	3,694
Thomas, Samuel	South Wales	25 May „	3,695
Thomas, Thomas	South Wales	25 May „	3,696
Thomas, William	South Wales	25 May „	3,703
Turner, Richard	Manchester	10 January 1900	3,914
Underwood, Joseph	Midland	18 November 1899	3,882
Wailes, Robert	Durham	2 September „	3,837
Wainwright, Enoch	North Staffordshire	6 July „	3,798
Wainwright, Samuel	Manchester	10 January 1900	3,915
Waite, John	Liverpool	22 June 1899	3,796
Walker, James	Midland	18 November „	3,883
Walsh, Joseph	Yorkshire and Lincolnshire	30 August „	3,807
Walshaw, Henry Smith	Manchester	10 January 1900	3,916
Ward, William	Midland	18 November 1899	3,884
Wardle, George Robert	South Wales	25 May „	3,697
Waring, John	Yorkshire and Lincolnshire	30 August „	3,819
Watkins, William	South Wales	25 May „	3,698
Watson, Ezra	Yorkshire and Lincolnshire	30 August „	3,805
Watson, James	East Scotland	16 June „	3,777
Watson, Peter	East Scotland	16 June „	3,778
Watson, William	East Scotland	16 June „	3,779
Whitcroft, Richard	North Staffordshire	6 July „	3,799
White, James	Durham	2 September „	3,830
Whyte, John	East Scotland	16 June „	3,780
Williams, Hezekiah	South Wales	25 May „	3,699
Williams, Thomas Vigors	South Wales	25 May „	3,701
Williams, William	Manchester	10 January 1900	3,917

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Name.	District in which Examined.	Date of Certificate.	Number of Certificate.
Williams, William Thomas	South Wales	25 May 1899	3,700
Willis, Edward...	Durham	2 September „	3,840
Wilson, David	West Scotland	30 December „	3,894
Wilson, Ernest Arthur	Manchester	10 January 1900	3,918
Wilson, Frederick	Newcastle	6 March 1899	3,640
Wilson, James	Yorkshire and Lincolnshire	30 August „	3,818
Wilson, John	East Scotland	16 June „	3,781
Wiltshire, Henry	South Wales	25 May „	3,702
Young, Oliver	South Western	22 September „	3,859
Young, William	East Scotland	16 June „	3,782

LIST OF

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GRANTED DURING THE YEAR 1899.

Name.	Name of Mine (if any) in which employed at the Time of Application for a Certificate as Under-Manager.	Name of Inspector in whose District Qualification was acquired.	Date of Certificate.	No. of Certificate.
Robert Polwarth ...	Dudley Colliery ...	Mr. J. L. Hedley ...	16th May, ... 1899	2,938
Edward Clark ...	Urpeth C. Pit ...	Mr. J. L. Hedley ...	18th November „	2,939

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MINES AND QUARRIES:

GENERAL REPORT AND STATISTICS

For 1899.

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GENERAL REPORT AND STATISTICS RELATING TO PERSONS EMPLOYED AND ACCIDENTS AT MINES AND QUARRIES IN THE UNITED KINGDOM, AND TO THE ENFORCEMENT OF THE MINES AND QUARRIES ACTS.

EDITED BY

C. LE NEVE FOSTER, D.Sc., F.R.S.

ONE OF HER MAJESTY'S INSPECTORS OF MINES.

Presented to both Houses of Parliament by Command of Her Majesty.

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For 1899.

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GENERAL REPORT AND STATISTICS

For 1899.

PART III.—OUTPUT.

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MINES AND QUARRIES:

GENERAL REPORT AND STATISTICS

For 1899.

PART III.—OUTPUT.

INTRODUCTION.

The most striking fact recorded in these mineral statistics for 1899 is the enormous output of coal, viz., 220,094,781 tons, showing an increase of 18,040,265 tons compared with the previous year. This country is now producing twice as much coal as it did in 1870, and probably nearly four times as much as in 1850. Durham and Yorkshire together are now yielding about as much coal as the whole of the United Kingdom half a century ago.

The unsatisfactory part of this volume is the deficiency of detail concerning our most important minerals, coal and iron ore. County outputs are given, but no further descent into local details is permissible, because the Coal Mines Regulation Act prohibits the publication of the individual annual returns. While a statement is made of the output of every little lead or tin mine, it is impossible to state officially which of our colliery companies can be compared, for instance, with such great undertakings as those at Anzin and Lens on the other side of the Channel. Is it wise that no particulars should be kept of the gradual depletion of our great national treasure? The total yearly shrinkage is recorded, but no account is kept in our official statistics of each individual vault which is being drained of its riches.

The Mineral Statistics Committee in 1894 recommended the amendment of the Statute and the publication of the output of individual collieries, but at present nothing has been done. The anomaly involved in the present state of things is specially marked in the case of our iron ores. The law prohibits the publication of the returns of *stratified* ironstone, but allows it in the case of *unstratified* iron ore. Consequently this volume gives full details of the amount of ore produced by each iron mine in Cumberland, whilst information concerning the output of individual mines in the Cleveland district has to be withheld from publication.

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Apart, however, from the question of the production of individual mines, the total output for the year, amounting to more than 220 million of tons and showing an increase of about 9 per cent. on the output for the previous year, points to the urgency which the question of the exhaustion of the coal supply is rapidly assuming. While it is impossible, in an Annual Report on the Mineral Output, to undertake the task of estimating the amount of coal still remaining in the British Isles and of attempting to arrive at any conclusion as to the time that may elapse before its exhaustion begins to be felt, it may perhaps not be out of place to call attention to the practical importance of checking its present thriftless use. Professor Perry pointed out a few days ago to the members of the British Association for the Advancement of Science that the best steam engines are utilising only one-twelfth of the energy available by the combustion of the fuel, while the ordinary steam engines utilise a far less proportion. Whether our coal supply is sufficient to last for some centuries, or whether, as is the opinion of many competent authorities, a serious coal famine will begin to be felt within the lives of the present generation, economy in the use of coal is unquestionably of the utmost importance, and the investigation of the best means of effecting such economy would repay even a large expenditure whether by the Government or by industrial corporations and technical societies. If the result of such inquiry were merely to effect an economy of one per cent. in the consumption of coal this would mean an annual saving to the coal consumers of this country of nearly $1\frac{2}{3}$ million tons, worth at last year's prices about £625,000.

Such an investigation might also deal specially with the question of the supply of coal for the Navy. At present certain classes of coal, which with little or no effort on the part of the stoker can be burned without the production of smoke, are specially used for steamships and are often known by the name of "steam coal." If any means can be devised by investigation and experiment, by which other classes of coal can be burned smokelessly, as is surely possible, our ships will no longer be dependent upon one class of fuel, the naval coal bills will be lessened, and the danger of the failure of coal available for naval purposes will arise only when the total coal supply of the country approaches the point of exhaustion.

Another matter of interest in the present statistics is the increase of the exportation of coal. The quantity of coal exported in 1899 (exclusive of coke and patent fuel) was more than 41 million tons—an amount more than the whole output of coal in any country in the world except the United States and Germany. Of this export, more than three-sevenths in quantity and almost half in value is from the South Wales ports. In 1898 and also in 1897 the export was only a little over 35 millions. For the purpose of comparison it is better to take the year 1897, as the quantities dealt with in 1898 were disturbed by the coal strike. Compared with the former year there has been an increase of nearly 6 millions in the total export, and this increase is almost entirely in the export to foreign countries, the export to the British Colonies and Possessions having increased by only 200,000 tons. The countries whose purchases of coal show the largest increase are Russia (which has increased its purchase by nearly $1\frac{1}{2}$ millions), France (more than 1 million), Sweden ($\frac{3}{4}$ million), Italy, and Holland. The exports to Germany, Spain, Egypt, and South America show only a small increase. The export to the United States is inconsiderable, amounting only to 119,000 tons, chiefly to ports on the Pacific. Among the British Colonies and Possessions there is a considerable increase in the export to India, and some increase in that to South Africa; elsewhere the tendency is rather to decrease.

It must not be assumed that the whole of the coal exported to foreign countries was consumed by foreign nations. Some of it was merely shipped to foreign

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ports and there utilised for re-coaling English steamers. What proportion was so employed does not appear from any statistics that are available, though possibly some indication may be gathered from the amounts sent to Malta, Gibraltar, and Aden, which in 1899 were respectively 418,000, 326,000, and 176,000 tons.

As regards minerals other than coal, the increasing importance of aluminium may be noted. The output of this metal now amounts to 550 tons, with a value of £71,125. The output thus approaches in quantity nearly to that of copper, while the value is considerably greater. In spite of higher prices, copper, lead and tin show diminished outputs.

The total value of all minerals raised approaches £100,000,000 sterling, the increase of £20,000,000 compared with 1898 being mainly due to the enhanced value of coal. With our present output, a rise of one penny in the price of coal represents nearly one million of money.

C. LE NEVE FOSTER.

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GENERAL SUMMARY OF THE MINERAL PRODUCE OF THE UNITED KINGDOM

AND OF

THE ISLE OF MAN.

Table 99.

Description of Mineral.		1898.		1899.	
		Quantity.	Value at the Mines and Quarries.	Quantity.	Value at the Mines and Quarries.
			£		£
Alum Clay (Bauxite) ...	Tons	12,402	2,898	8,009	1,871
Alum Shale	,,	13,617	1,702	5,820	728
Arsenical Pyrites ...	,,	11,144	8,144	13,519	12,138
Arsenic	,,	4,174	53,787	3,829	54,236
Barytes	,,	22,225	23,253	24,664	25,644
Bog Ore	,,	5,418	1,354	4,321	1,080
Chalk	,,	4,298,014	180,651	4,678,132	209,629
Chert and Flint... ...	,,	82,057	14,513	68,834	13,216
Clay	,,	14,738,474	1,616,358	15,064,857	1,542,657
Coal...	,,	202,054,516	64,169,382	220,094,781	83,481,137
Copper Ore	,,	9,001	25,849	8,144	33,798
Copper Precipitate ...	,,	130	1,300	175	1,550
Fluor Spar	,,	56	49	783	841
Gold Ore	,,	703	1,158	3,047	10,170
Gravel and Sand ...	,,	1,625,690	135,538	1,771,276	132,399
Gypsum	,,	196,028	71,316	212,563	76,456
Igneous Rocks	,,	4,478,308	1,042,000	4,709,925	1,095,763
Iron Ore	,,	14,176,938	3,406,628	14,461,330	3,895,485
Iron Pyrites	,,	12,108	4,804	12,230	4,671
Lead Ore	,,	32,985	267,402	30,999	296,784
Limestone (other than Chalk)	,,	11,980,578	1,256,154	12,302,890	1,335,067
Manganese Ore	,,	231	200	415	249
Mica...	,,	907	454	650	244
Ochre, Umber, &c. ...	,,	19,827	13,003	16,314	13,579
Oil Shale	,,	2,137,993	534,498	2,210,824	553,003
Petroleum	,,	6	14	5	12
Phosphate of Lime ...	,,	1,550	2,713	1,446	2,529
Salt	,,	1,878,665	620,115	1,914,893	644,174
Sandstone	,,	5,242,115	1,632,786	5,212,624	1,653,704
Slate	,,	668,859	1,900,228	639,840	1,787,071
Strontium Sulphate ...	,,	12,941	3,674	12,629	6,314
Tin Ore (*Dressed*) ...	,,	7,380	288,325	6,392	440,509
Uranium Ore	,,	26	1,185	7	275
Wolfram	,,	326	15,844	94	3,831
Zinc Ore	,,	23,552	117,784	23,135	139,482
Total Values		—	77,415,063	—	**97,470,296**

Table 100.

Summary of the Metals obtainable by Smelting from the Ores in the above Table.

Description of Metal.		1898.		1899.	
		Quantity.	Value at the Average Market Price.	Quantity.	Value at the Average Market Price.
			£		£
Aluminium	Tons	310	45,880	550	71,125
Copper	,,	640	35,523	637	49,768
Gold	Ozs.	395	1,299	3,327	12,086
Iron	Tons	4,850,508	12,740,043	4,913,846	17,034,874
Lead	,,	25,355	332,995	23,552	355,379
Silver	Ozs.	211,403	23,728	191,927	21,942
Sodium	Tons	85	12,750	380	41,350
Tin	,,	4,648	345,812	4,013	508,094
Zinc...	,,	8,574	179,482	8,698	220,132
Total Values		—	13,717,512	—	**18,314,750**

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SUMMARIES OF THE MINERAL PRODUCE OF ENGLAND, WALES, SCOTLAND, IRELAND, AND THE ISLE OF MAN.

TABLE 101.

ENGLAND.

Description of Mineral.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
		£		£
ALUM SHALE ... ... Tons	13,617	1,702	5,820	728
ARSENICAL PYRITES ... „	11,144	8,144	13,519	12,138
ARSENIC ... ... „	4,174	53,787	3,829	54,236
BARYTES ... ... „	15,131	19,635	19,367	22,969
CHALK ... ... „	4,298,014	180,651	4,678,132	209,629
CHERT AND FLINT ... „	77,285	12,613	65,038	11,363
CLAY ... ... „	12,736,833	1,384,507	13,045,621	1,312,906
COAL ... ... „	147,823,430	46,753,740	155,864,884	58,949,808
COPPER ORE ... ... „	6,377	17,867	6,169	23,797
FLUOR SPAR ... ... „	56	49	783	841
GRAVEL AND SAND ... „	1,237,589	100,795	1,334,153	100,201
GYPSUM ... ... „	196,028	71,316	212,563	76,456
IGNEOUS ROCKS ... ... „	2,441,317	516,671	2,505,096	514,269
IRON ORE ... ... „	13,234,485	3,039,715	13,507,168	3,467,357
IRON PYRITES ... ... „	9,524	3,427	9,819	3,682
LEAD ORE ... ... „	15,337	112,238	12,320	109,263
LIMESTONE (other than Chalk) „	9,258,617	941,645	9,371,359	998,162
MANGANESE ORE ... ... „	35	18	87	44
MICA ... ... „	907	454	650	244
OCHRE, UMBER, &c. ... „	18,182	9,903	14,059	10,764
OIL SHALE ... ... „	2,975	744	200	50
PETROLEUM ... ... „	6	14	5	12
PHOSPHATE OF LIME ... „	1,550	2,713	1,446	2,529
SALT ... ... „	1,838,450	613,605	1,867,838	630,855
SANDSTONE ... ... „	2,899,418	1,065,280	3,001,206	1,103,362
SLATE ... ... „	91,015	126,160	81,715	128,247
STRONTIUM SULPHATE ... „	12,941	3,674	12,629	6,314
TIN ORE (*Dressed*) ... „	7,380	288,325	6,392	440,509
URANIUM ORE ... ... „	26	1,185	7	275
WOLFRAM ... ... „	326	15,844	94	3,831
ZINC ORE ... ... „	11,028	54,253	9,112	45,910
Total Values	—	55,400,674	—	**68,240,751**

TABLE 102.

WALES.

Description of Mineral.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
		£		£
BARYTES ... ... Tons	1,134	567	1,092	546
CHERT AND FLINT ... „	2,007	1,808	2,644	1,815
CLAY ... ... „	755,528	79,482	717,009	69,535
COAL ... ... „	23,863,505	8,155,889	32,961,764	12,803,428
COPPER ORE ... ... „	2,624	7,982	1,442	9,468
COPPER PRECIPITATE ... „	130	1,300	175	1,550
GOLD ORE ... ... „	703	1,158	3,047	10,170
GRAVEL AND SAND ... „	43,301	9,015	47,623	7,888
IGNEOUS ROCKS ... ... „	644,537	141,039	745,427	151,187
IRON ORE ... ... „	4,963	1,859	8,315	3,609
LEAD ORE ... ... „	11,094	97,867	12,498	127,283
LIMESTONE ... ... „	1,575,529	152,684	1,886,195	177,764
MANGANESE ORE ... ... „	196	182	328	205
OCHRE, UMBER, &c. ... „	970	2,425	1,150	1,710
OIL SHALE ... ... „	1,609	402	2,375	891
SANDSTONE ... ... „	611,773	99,198	592,820	96,762
SLATE ... ... „	507,021	1,668,980	492,626	1,560,838
ZINC ORE ... ... „	10,249	52,589	11,387	78,234
Total Values	—	10,474,426	—	**15,102,883**

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SUMMARIES OF MINERAL PRODUCE—*continued.*

TABLE 103.

SCOTLAND.

Description of Mineral.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
		£		£
BARYTES ... ... Tons	1,100	275	927	162
CLAY ... ... „	1,021,738	141,108	1,189,284	153,596
COAL ... ... „	30,237,616	9,207,274	31,142,713	11,676,441
GRAVEL AND SAND ... „	302,398	23,209	320,583	20,566
IGNEOUS ROCKS ... ... „	1,187,630	340,204	1,241,291	374,054
IRON ORE ... ... „	824,219	347,010	843,585	408,504
LEAD ORE ... ... „	2,575	19,343	2,217	16,654
LIMESTONE ... ... „	610,211	113,397	527,717	112,818
OIL SHALE ... ... „	2,133,409	533,352	2,208,249	552,062
SANDSTONE ... ... „	1,697,689	460,271	1,588,158	444,735
SLATE ... ... „	42,674	85,976	41,051	83,519
ZINC ORE ... ... „	140	490	34	119
Total Values	—	11,271,909	—	**13,843,230**

TABLE 104.

IRELAND.

Description of Mineral.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
		£		£
ALUM CLAY (BAUXITE) ... Tons	12,402	2,898	8,009	1,871
BARYTES ... ... „	4,860	2,776	3,278	1,967
BOG ORE ... ... „	5,418	1,354	4,321	1,080
CHERT AND FLINT ... „	2,765	92	1,152	38
CLAY ... ... „	214,275	10,801	105,943	6,445
COAL ... ... „	129,965	52,479	125,420	51,460
COPPER ORE ... ... „	—	—	533	533
GRAVEL AND SAND ... „	42,402	2,519	66,055	3,601
IGNEOUS ROCKS ... ... „	188,689	43,017	207,923	53,808
IRON ORE ... ... „	113,271	18,044	102,262	16,015
IRON PYRITES ... ... „	2,584	1,377	2,411	989
LEAD ORE ... ... „	31	178	40	314
LIMESTONE ... ... „	523,849	45,615	508,347	45,442
OCHRE ... ... „	675	675	1,105	1,105
SALT ... ... „	40,215	6,510	47,055	13,319
SANDSTONE ... ... „	31,995	7,961	28,613	8,733
SLATE ... ... „	6,641	17,830	5,443	13,410
Total Values	—	214,126	—	**220,130**

TABLE 105.

ISLE OF MAN.

Description of Mineral.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
		£		£
CLAY ... ... Tons	10,100	460	7,000	175
GRAVEL AND SAND ... „	—	—	2,862	143
IGNEOUS ROCKS ... ... „	6,135	1,069	10,188	2,445
LEAD ORE ... ... „	3,948	37,776	3,924	43,270
LIMESTONE ... ... „	12,372	2,813	9,272	881
SANDSTONE ... ... „	1,240	76	1,827	112
SLATE ... ... „	21,508	1,282	19,005	1,057
ZINC ORE ... ... „	2,135	10,452	2,602	15,219
Total Values	—	53,928	—	**63,302**

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TABLE 106.

OUTPUT of COAL and other MINERALS and the NUMBER of PERSONS REGULATION ACTS

COUNTY.	MINERALS					
	Coal.	Clay and Shale, other than Fireclay and Oil Shale.	Fireclay.	Iron Pyrites.	Ironstone.	Limestone.
ENGLAND :—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Chester	721,431	—	17,018	—	—	—
Cumberland	2,100,418	—	43,397	—	—	—
Derby	14,594,424	—	71,244	2,413	3,526	—
Devon	—	—	120	—	—	—
Durham	34,870,675	17,344	480,667	—	—	—
Gloucester	1,528,014	—	6,987	—	—	—
Kent	—	—	—	—	—	—
Lancaster	24,387,475	32,643	152,920	712	—	—
Leicester	1,888,819	—	63,095	—	—	—
Lincoln	—	—	—	—	139,850	—
Monmouth	10,103,067	—	79,481	—	12,794	—
Northumberland	11,184,072	—	185,266	—	—	—
Nottingham	8,224,441	—	3,867	90	—	—
Salop	766,219	65,169	17,876	160	28,511	—
Somerset	983,973	—	550	—	—	—
Stafford	13,881,220	—	249,008	735	1,065,224	—
Warwick	2,873,098	—	27,354	5,709	357	—
Westmoreland	810	—	—	—	—	—
Worcester	842,951	—	113,019	—	2,847	—
York	26,904,465	5,820*	397,187	—	5,671,878	—
Total	155,855,572	120,976	1,909,056	9,819	6,924,987	—
WALES :—						
Brecon	383,465	—	—	—	379	—
Carmarthen	1,207,205	—	5,693	—	—	—
Denbigh	2,512,104	—	56,931	—	100	—
Flint	682,630	—	28,112	—	—	—
Glamorgan	28,116,941	1,450	106,639	—	6,817	—
Pembroke	59,419	—	—	—	—	—
Total	32,961,764	1,450	197,375	—	7,296	—
SCOTLAND :—						
Argyll	154,786	—	—	—	—	—
Dumfries						
Ayr	3,809,313	—	112,876	—	354,333	—
Clackmannan	366,697	—	1,817	—	—	—
Dumbarton	511,199	—	29,585	—	38,722	11,398
Edinburgh	1,267,521	—	53,810	—	44,668	—
Fife	4,927,489	6,393	29,269	—	25,269	—
Haddington	450,588	—	30,085	—	—	—
Kinross	1,600	500	3,000	—	—	—
Lanark	16,416,754	35,514	370,076	—	169,528	—
Linlithgow	948,748	—	31,290	—	45,298	—
Peebles	293	—	—	—	—	—
Perth	530	—	—	—	—	—
Renfrew	12,491	—	76,999	—	162,755	2,698
Stirling	2,269,992	—	79,992	—	3,012	18,299
Sutherland	4,581	—	—	—	—	—
Total	31,142,612	42,407	818,799	—	843,585	32,395

* Alum Shale.

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No. I. COAL MINES.

TABLE 106.

EMPLOYED in each COUNTY at MINES worked under the COAL MINES during the Year 1899.

RAISED.				PERSONS EMPLOYED.			COUNTY.
Oil Shale.	Sand.	Sandstone.	Total.	Below Ground.	Above Ground.	Total.	
Tons.	Tons.	Tons.	Tons.				ENGLAND:—
—	—	1,000	739,449	2,007	553	2,560	Chester.
—	—	3,492	2,147,307	5,894	2,003	7,897	Cumberland
—	—	—	14,671,607	35,191	8,850	44,041	Derby
—	—	—	120	2	—	2	Devon.
—	—	—	35,368,686	82,260	25,800	108,060	Durham.
—	—	—	1,535,001	5,757	1,243	7,000	Gloucester.
—	—	—	—	90	78	168	Kent.
—	—	—	24,573,750	64,995	15,885	80,880	Lancaster.
—	—	—	1,951,914	5,164	1,402	6,566	Leicester.
—	—	—	139,850	83	122	205	Lincoln.
—	—	2,968	10,198,330	26,973	4,871	31,844	Monmouth.
—	—	—	11,369,338	30,289	7,092	37,381	Northumberland.
—	—	—	8,228,398	20,159	5,117	25,276	Nottingham.
—	—	—	877,935	2,844	932	3,776	Salop.
—	—	—	964,523	4,325	869	5,194	Somerset.
205†	—	—	15,196,392	33,550	11,408	44,958	Stafford.
—	—	—	2,906,518	6,855	2,059	8,914	Warwick.
—	—	—	810	7	3	10	Westmoreland.
—	—	—	958,817	1,767	622	2,389	Worcester.
—	3,850	76,155	33,059,355	80,556	21,581	102,137	York.
205†	3,850	83,635	164,908,100	408,768	110,490	519,258	Total.
							WALES:—
—	—	—	333,844	1,222	222	1,444	Brecon.
—	—	—	1,212,898	3,880	1,004	4,884	Carmarthen.
—	—	—	2,569,135	7,805	1,711	9,516	Denbigh.
2,375	—	—	713,117	1,999	493	2,492	Flint.
—	—	50	28,231,897	79,613	14,495	94,108	Glamorgan.
—	—	—	59,419	293	109	402	Pembroke.
2,375	—	50	33,170,310	94,812	18,034	112,846	Total.
							SCOTLAND:—
—	—	—	154,736	49	11	60	Argyll.
				289	71	360	Dumfries.
1,841	—	2,596	4,280,959	10,840	1,962	12,802	Ayr.
—	—	—	368,514	833	153	986	Clackmannan.
—	—	—	590,904	1,542	529	2,071	Dumbarton.
628,430	—	—	1,994,429	4,693	1,153	5,846	Edinburgh.
—	—	—	4,988,420	11,149	2,636	13,785	Fife.
—	—	—	480,673	957	176	1,133	Haddington.
—	—	—	5,100	12	16	28	Kinross.
76,246	—	5,719	17,073,837	37,682	7,902	45,584	Lanark.
1,499,378	—	—	2,524,714	4,436	902	5,338	Linlithgow.
—	—	—	293	2	1	3	Peebles.
—	—	—	560	2	—	2	Perth.
—	—	—	254,943	589	140	729	Renfrew.
2,288	—	13,031	2,388,614	5,603	1,560	7,163	Stirling.
66	—	—	4,647	18	4	22	Sutherland.
2,208,249	—	21,346	35,109,393	78,696	17,216	95,912	Total.

† Including 5 tons of petroleum.

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TABLE 106—*continued.*

OUTPUT of COAL and other MINERALS and the NUMBER of PERSONS REGULATION ACTS during

COUNTY.	MINERALS					
	Coal.	Clay and Shale other than Fireclay and Oil Shale.	Fireclay.	Iron Pyrites.	Ironstone.	Limestone.
IRELAND:—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Antrim	6,111	—	—	—	—	—
Cork	—	—	—	—	—	—
Kilkenny	60,256	—	—	—	—	—
Leitrim	2,160	—	—	—	—	...
Queen's County	18,222	—	224	—	—	—
Roscommon	6,808	—	—	—	—	—
Tipperary	12,864	—	—	—	—	—
Tyrone	18,999	—	5,637	—	—	—
Total	125,420	—	5,861	—	—	—
Total for the United Kingdom ..	**220,685,368**	**164,833**	**2,931,991**	**9,819**	**7,775,868**	**32,395**
Total for preceding year	202,042,243	133,110	2,783,219	9,524	7,901,046	38,633

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TABLE 106—*continued.*

EMPLOYED in each COUNTY at MINES worked under the COAL MINES the Year 1899—*continued.*

RAISED.				PERSONS EMPLOYED.			COUNTY.
Oil Shale.	Sand.	Sandstone.	Total.	Below Ground.	Above Ground.	Total.	
Tons.	Tons.	Tons.	Tons.				IRELAND:—
—	—	—	6,111	25	13	38	Antrim.
—	—	—	—	—	6	6	Cork.
—	—	—	60,256	288	97	385	Kilkenny.
—	—	—	2,160	21	4	25	Leitrim.
—	—	—	18,446	192	54	246	Queen's County.
—	—	—	6,808	51	21	72	Roscommon.
—	—	—	12,864	81	33	114	Tipperary.
—	—	—	24,636	75	32	107	Tyrone.
—	—	—	131,281	733	260	993	Total.
2,216,829*	3,850	165,631	233,319,084	583,000	146,000	729,000	Total for the United Kingdom
2,137,999†	4,426	111,754	215,161,954	567,124	139,770	706,894	Total for preceding year.

* Including 5 tons of Petroleum. † Including 6 tons of Petroleum.

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COUNTY SUMMARIES.—No. II.

TABLE 107.

OUTPUT of MINERALS and the NUMBER of PERSONS EMPLOYED in each COUNTY at MINES

COUNTY.	MINERALS									
	Barytes.	Chalk.	Clay and Shale.	Copper Ore and Copper Precipitate.	Flint and Chert.	Gypsum.	Iron Ore.	Lead Ore.	Limestone.	Ochre and Umber.
ENGLAND:—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Bedford	—	—	1,469	—	—	—	—	—	—	—
Berks	—	411	—	—	11	—	—	—	—	—
Buckingham	—	—	—	--	—	—	—	—	—	—
Chester	—	—	—	—	—	—	—	—	5,486	—
Cornwall	—	—	—	5,172	—	—	—	—	—	19
Cumberland	32	—	—	—	—	26,451	1,137,750	825	—	—
Derby	230	—	—	—	1,958	11,567	—	4,266	4,963	275
Devon	—	—	39,550	990	—	—	780	—	—	4
Dorset	—	—	24,626	—	—	—	—	—	8,779	—
Durham	2,100	—	—	—	—	—	16,960	3,361	—	—
Gloucester	—	—	3,500	—	—	—	26,101	—	589	395
Hertford	—	999	—	—	100	—	—	—	—	—
Kent	—	3,095	15,662	—	125	—	—	—	—	—
Lancaster	—	—	940	7	—	—	670,924	—	—	—
Leicester	—	—	—	—	—	—	—	—	12,854	—
Northampton	—	—	—	—	—	—	—	—	187	—
Northumberland ..	7,309	—	—	—	—	--	—	134	4,745	—
Nottingham	—	—	—	—	—	50,866	—	—	—	—
Oxford	—	—	—	—	—	—	—	—	—	—
Salop	5,680	—	—	—	—	—	—	1,468	3,799	—
Somerset	—	—	5,555	—	—	—	—	—	2,643	1,108
Stafford	—	—	—	—	—	48,998	—	—	46,963	—
Suffolk	—	53	—	—	335	—	—	—	—	—
Surrey	—	—	—	—	—	—	—	—	—	—
Sussex	—	—	—	—	—	18,454	—	—	—	—
Westmoreland	658	—	—	—	—	2,000	—	1,198	—	—
Wilts	—	—	—	—	—	—	—	—	165,488	—
Worcester	—	—	—	—	—	—	—	—	47,889	—
York	2,358	—	—	—	—	—	—	1,059	—	—
Total	18,367	4,558	91,292	6,169	2,529	158,326	1,852,515	12,311	304,395	1,801
WALES:—										
Anglesey	—	—	—	450	—	—	—	—	—	1,150
Brecon	—	—	—	—	—	—	—	63	—	—
Cardigan	—	—	—	—	—	—	—	598	—	—
Carmarthen	—	—	—	—	—	—	—	933	—	—
Carnarvon	—	—	—	620	—	—	—	688	—	—
Denbigh	—	—	—	—	—	—	—	1,983	—	—
Flint	—	—	—	—	—	—	1,019	7,617	811	—
Glamorgan	—	—	—	—	—	—	—	—	—	—
Merioneth	—	—	—	526	—	—	—	—	—	—
Montgomery	1,092	—	—	21	—	—	—	616	—	—
Radnor	—	—	—	—	—	—	—	—	—	—
Total	1,092	—	—	1,617	—	—	1,019	12,498	811	1,150

[a] Arsenic. [b] Arsenical Pyrites. [c] Uranium. [d] Wolfram. [e] Sand.

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METALLIFEROUS MINES.

TABLE 107.

worked under the METALLIFEROUS MINES REGULATION ACT during the Year 1899.

RAISED.							PERSONS EMPLOYED.			COUNTY.
Rock Salt.	Sand-stone.	Slate.	Tin Ore (Dressed)	Zinc Ore.	Other Minerals.	Total.	Below Ground.	Above Ground.	Total.	
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.				ENGLAND :—
—	—	—	—	—	—	1,469	5	9	14	Bedford.
—	—	—	—	—	—	422	3	2	5	Berks.
—	—	—	—	—	—	—	—	—	—	Buckingham.
44,882	2,051	—	—	—	—	52,369	96	29	125	Chester.
—	—	485	5,859	42	1,361[a] 9,679[b] 7[c] 89[d]	22,513	3,238	2,593	5,831	Cornwall.
—	—	4,164	—	7,184	—	1,176,406	4,093	1,385	5,478	Cumberland.
—	—	—	—	453	1,000[e] 633[f] 87[g]	25,422	317	136	453	Derby.
—	1,938	—	3	—	2,468[a] 3,750[b]	49,483	415	506	921	Devon.
—	—	—	—	—	—	33,405	133	106	239	Dorset.
—	35	—	—	92	100[f] 2,701[h]	25,349	441	232	673	Durham.
—	—	—	—	—	—	30,585	245	75	320	Gloucester.
—	—	—	—	—	—	1,099	5	1	6	Hertford.
—	—	—	—	—	—	18,872	6	12	18	Kent.
99,405	86,043	2,394	—	—	—	859,713	2,252	1,535	3,787	Lancaster.
—	—	—	—	—	—	12,854	25	3	28	Leicester.
—	3,738	—	—	—	—	3,925	20	29	49	Northampton.
—	75	—	—	604	—	12,867	269	130	399	Northumberland.
—	—	—	—	—	—	50,866	150	105	255	Nottingham.
—	26	—	—	—	—	26	3	1	4	Oxford.
—	—	—	—	737	—	11,684	259	142	401	Salop.
—	—	—	—	—	—	9,306	33	30	63	Somerset.
—	628	—	—	—	—	96,589	167	199	366	Stafford.
—	—	—	—	—	—	368	5	—	5	Suffolk.
—	11,744	—	—	—	2,812[e]	14,556	30	6	36	Surrey.
—	1,895	—	—	—	—	20,349	39	62	101	Sussex.
—	290	1,893	—	—	—	6,039	135	156	291	Westmoreland.
—	—	—	—	—	—	165,488	977	165	1,142	Wilts.
—	—	—	—	—	—	47,889	74	29	103	Worcester.
—	93,406	3,150	—	—	81,632[h]	181,605	726	1,029	1,755	York.
144,287	201,869	12,086	5,862	9,112	106,319	2,931,538	14,161	8,707	22,868	Total.
										WALES :—
—	—	—	—	57	—	1,657	104	169	273	Anglesey.
—	—	—	—	—	23,529[e]	23,592	54	14	68	Brecon.
—	—	—	—	1,819	—	2,417	328	304	632	Cardigan.
—	—	—	—	9	—	942	76	47	123	Carmarthen.
—	—	8,270	—	1,477	—	11,055	432	590	1,022	Carnarvon.
—	—	4,776	—	3,273	12,128[h]	22,160	375	414	789	Denbigh.
—	—	—	—	4,728	—	14,175	807	538	1,345	Flint.
—	5,000	—	—	—	—	5,000	32	16	48	Glamorgan.
—	300	151,275	—	—	3,047[i] 328[e]	155,476	2,603	2,754	5,357	Merioneth.
—	—	2,191	—	24	—	3,944	128	162	290	Montgomery.
—	—	—	—	—	—	—	2	—	2	Radnor.
—	5,300	166,512	—	11,387	39,032	240,418	4,941	5,008	9,949	Total.

[f] Fluor Spar. [e] Manganese Ore. [h] Igneous Rocks. [i] Gold Ore.

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TABLE 107—*continued.*

OUTPUT of MINERALS and the NUMBER of PERSONS EMPLOYED in each COUNTY the Year 1899—

COUNTY.	MINERALS									
	Barytes.	Chalk.	Clay and Shale.	Copper Ore and Copper Precipitate.	Flint and Chert.	Gypsum.	Iron Ore.	Lead Ore.	Limestone.	Ochre and Umber.
SCOTLAND:—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Ayr	—	—	251	—	—	—	—	—	—	—
Dumfries	—	—	—	—	—	—	—	1,848	2,000	—
Edinburgh	—	—	—	—	—	—	—	—	154,714	—
Fife	—	—	—	—	—	—	—	—	75,039	—
Kirkcudbright	—	—	—	—	—	—	—	—	—	—
Lanark	—	—	22,000	—	—	—	—	369	48,818	—
Linlithgow	—	—	—	—	—	—	—	—	1,930	—
Renfrew	927	—	—	—	—	—	—	—	—	—
Stirling	—	—	—	—	—	—	—	—	1,219	—
Total	927	—	22,251	—	—	—	—	2,217	283,720	—
IRELAND:—										
Antrim	—	—	—	—	—	—	102,262	—	—	—
Cork	2,278	—	—	—	—	—	—	—	—	—
Donegal	—	—	—	—	—	—	—	—	—	—
Down	—	—	—	—	—	—	—	29	—	—
Sligo	—	—	—	—	—	—	—	—	—	—
Wicklow	—	—	—	533	—	—	—	11	—	1,105
Total	2,278	—	—	533	—	—	102,262	40	—	1,105
ISLE OF MAN	—	—	—	—	—	—	—	3,924	—	—
Total for the United Kingdom.	23,664	4,558	113,543	8,319	2,529	158,326	1,955,796	30,990	588,916	4,656
Total for preceding year ..	21,175	1,878	86,641	9,131	2,313	134,195	2,167,100	32,679	555,625	2,800

[1] Alum Clay.

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TABLE 107—*continued.*

at MINES worked under the METALLIFEROUS MINES REGULATION ACT during *continued.*

RAISED.							PERSONS EMPLOYED.			COUNTY.
Rock Salt.	Sand-stone.	Slate.	Tin Ore (Dressed)[j]	Zinc Ore.	Other Minerals.	Total.	Below Ground.	Above Ground.	Total.	
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.				SCOTLAND:—
—	—	—	—	—	—	251	14	12	26	Ayr.
—	—	—	—	34	—	3,882	120	110	230	Dumfries.
—	—	—	—	—	—	154,714	176	54	230	Edinburgh.
—	—	—	—	—	—	75,039	125	49	174	Fife.
—	—	—	—	—	—	—	—	—	—	Kirkcudbright.
—	28,100	—	—	—	—	99,287	203	167	370	Lanark.
—	—	—	—	—	—	1,930	5	3	8	Linlithgow.
—	4,699	—	—	—	—	5,626	18	—	18	Renfrew.
—	—	—	—	—	—	1,219	12	10	22	Stirling.
—	32,799	—	—	34	—	341,948	673	405	1,078	Total.
										IRELAND:—
34,773	—	—	—	—	8,009[k]	145,044	363	70	433	Antrim.
—	—	—	—	—	—	3,278	48	97	145	Cork.
—	—	—	—	—	—	—	3	6	9	Donegal
—	—	—	—	—	—	29	3	2	5	Down.
—	—	—	—	—	—	—	—	—	—	Sligo.
—	—	—	—	—	2,411[k]	4,060	34	11	45	Wicklow.
34,773	—	—	—	—	10,420	152,411	451	186	637	Total.
—	—	—	—	2,602	—	6,526	392	233	625	ISLE OF MAN.
179,010	**239,963**	**178,598**	**5,662**	**23,135**	**155,771**	**3,672,841**	**20,618**	**14,539**	**35,157**	**Total for the United Kingdom.**
182,770	240,724	177,664	6,588	23,562½	161,893	3,812,728	20,173	14,058	34,231	Total for preceding year.

[k] Iron Pyrites.

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COUNTY SUMMARIES.—

TABLE 108.

OUTPUT of MINERALS and the NUMBER of PERSONS EMPLOYED in each COUNTY

COUNTY.	MINERALS										
	Barytes.	Chalk.	Chert and Flint.	Clays.	Coal	Fluor Spar.	Gravel and Sand.	Gypsum.	Igneous Rocks.	Ironstone.	Lead Ore.
ENGLAND:—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Bedford	—	61,745	—	165,360	—	—	78,420	—	—	—	—
Berks	—	5,427	110	110,953	—	—	18,866	—	—	—	—
Buckingham	—	360	—	8,680	—	—	7,000	—	—	—	—
Cambridge	—	46,023	—	244,380	—	—	2,520	—	—	—	—
Chester	—	—	—	3,949	—	—	26,785	—	—	—	—
Cornwall	—	—	432	564,594	—	—	1,825	—	222,614	—	—
Cumberland	—	—	—	32,030	—	—	12,686	17,467	103,923	—	—
Derby	—	—	1,575	447,964	606	50	29,218	—	—	—	9
Devon	1,000	20	2,009	251,321	—	—	7,050	—	48,651	—	—
Dorset	—	1,420	—	123,558	—	—	35,055	—	—	—	—
Durham	—	—	—	246,442	—	—	20,471	—	70,943	—	—
Essex	—	371,176	10,341	134,433	—	—	38,150	—	—	—	—
Gloucester	—	—	1,000	243,686	—	—	2,940	—	—	—	—
Hants	—	224,712	15	64,079	—	—	13,349	—	—	—	—
Hereford	—	—	—	8,270	—	—	1,335	—	—	—	—
Hertford	—	45,889	50	59,760	—	—	105,142	—	—	—	—
Huntingdon	—	—	—	891,834	—	—	—	—	—	—	—
Kent	—	3,217,886	21,783	281,211	—	—	202,137	—	—	—	—
Lancaster	—	—	—	1,169,989	50	—	24,128	—	8,235	—	—
Leicester	—	—	—	544,563	—	—	7,500	—	1,099,386	328,980	—
Lincoln	—	37,821	—	180,071	—	—	4,774	—	—	1,530,084	—
Middlesex	—	80,080	690	15,62	—	—	13,902	—	—	—	—
Monmouth	—	—	—	89,654	—	—	—	—	—	—	—
Norfolk	—	23,986	6,470	22,591	—	—	84,474	—	—	—	—
Northampton	—	—	—	323,708	—	—	39,213	—	—	1,443,423	—
Northumberland	—	—	—	117,280	—	—	42,927	—	108,682	—	—
Nottingham	—	—	—	395,356		—	126,300	26,946	—	20	—
Oxford	—	1,457	360	30,022		—	2,467	—	—	—	—
Rutland	—	—	—	2,700	—	—	—	—	—	—	—
Salop	—	—	—	48,703	—	—	9,740	—	272,037	—	—
Somerset	—	980	—	172,048	—	—	5,970	5,875	—	2,649	—
Stafford	—	—	—	1,541,472	5,812	—	175,878	—	165,529	4,534	—
Suffolk	—	12,132	1,647	71,396	—	—	3,791	—	—	—	—
Surrey	—	266,674	4,474	51,829	—	—	59,396	—	—	—	—
Sussex	—	218,468	10,923	54,994	—	—	18,630	—	—	—	—
Warwick	—	—	—	624,079	—	—	41,405	—	139,352	30,140	—
Westmoreland	—	—	—	50	—	—	—	4,009	66,198	—	—
Wilts	—	7,089	—	29,735	—	—	6,289	—	—	67,603	—
Worcester	—	—	—	,940	175	—	20,351	—	16,045	1,034	—
York	—	56,249	630	955,806	2,667	—	36,398	—	99,168	288	—
TOTAL	1,000	4,673,574	62,509	10,930,117	9,312	50	1,326,491	54,297	2,420,763	3,408,755	9

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No. III.—QUARRIES.

TABLE 108.

at QUARRIES worked under the QUARRIES ACT during the Year 1899.

RAISED.									PERSONS EMPLOYED.			COUNTY.
Limestone.	Mica.	Ochre.	Phosphate of Lime.	Sandstone.	Slate.	Sulphate of Strontia.	Tin Ore (Dressed).	Total.	Inside.	Outside	Total.	
Tons.	Tons.	Tons.		Tons.	Tons.	Tons.	Tons.	Tons.				ENGLAND:—
2,750	—	—	—	150	—	—	—	308,425	442	50	492	Bedford.
—	—	—	—	3,335	—	—	—	138,691	261	26	287	Berks.
1,193	—	—	—	—	—	—	—	17,233	55	21	76	Buckingham.
750	—	—	21	—	—	—	—	293,894	273	56	329	Cambridge.
—	—	—	—	124,921	—	—	—	155,655	592	212	804	Chester.
4,368	650	400	—	5,182	31,923	—	21	832,009	3,951	1,628	5,579	Cornwall.
524,417	—	—	—	48,860	502	—	—	739,825	864	321	1,185	Cumberland.
1,756,307	—	—	—	165,366	—	—	—	2,401,097	2,876	1,208	4,084	Derby.
527,026	—	1,600	—	69,549	13,901	—	—	922,127	1,535	627	2,162	Devon.
510,435	—	—	—	379	—	—	—	670,847	1,162	637	1,799	Dorset.
1,944,207	—	—	—	82,013	—	—	—	2,364,076	2,476	511	2,987	Durham.
—	—	—	—	—	—	—	—	554,109	342	83	425	Essex.
170,681	—	1,500	—	123,534	—	—	—	543,341	825	630	1,455	Gloucester.
320	—	—	—	3,162	—	—	—	305,667	320	60	380	Hants.
13,646	—	—	—	1,665	—	—	—	24,916	55	1	56	Hereford.
—	—	—	—	—	—	—	—	210,841	247	66	313	Hertford.
—	—	—	—	—	—	—	—	891,834	365	40	405	Huntingdon.
149,941	—	—	—	1,594	—	—	—	3,874,552	1,756	660	2,416	Kent.
600,480	—	—	—	734,189	17,762	—	—	2,554,833	3,694	2,318	6,012	Lancaster.
129,222	—	—	—	—	225	—	—	2,109,876	2,493	1,450	3,943	Leicester.
44,422	—	—	—	130	—	—	—	1,797,362	914	107	1,021	Lincoln.
—	—	—	—	—	—	—	—	110,247	43	10	53	Middlesex.
79,323	—	—	—	48,048	—	—	—	217,025	389	100	489	Monmouth.
1,402	—	—	—	3,879	—	—	—	142,802	292	52	344	Norfolk.
154,118	—	—	—	4,893	—	—	—	1,965,355	1,582	176	1,758	Northampton.
98,783	—	—	—	132,387	—	—	—	500,059	1,255	353	1,608	Northumberland.
91,485	—	—	—	5,907	—	—	—	646,014	665	197	862	Nottingham.
10,442	—	—	—	3,612	—	—	—	48,360	138	42	180	Oxford.
1,687	—	—	—	5,377	—	—	—	9,764	58	21	79	Rutland.
168,852	—	—	—	36,757	—	—	—	536,089	578	732	1,310	Salop.
477,515	—	8,758	—	58,910	1,750	475	—	734,930	1,151	456	1,607	Somerset.
266,768	—	—	—	63,429	—	—	—	2,223,422	2,113	725	2,838	Stafford
—	—	—	—	—	—	—	—	88,966	244	38	282	Suffolk.
6,629	—	—	—	8,828	—	—	—	397,830	348	193	541	Surrey.
—	—	—	—	12,650	—	—	—	315,665	440	84	524	Sussex.
227,959	—	—	—	116,440	—	—	—	1,179,375	1,164	362	1,526	Warwick.
71,492	—	—	—	2,796	1,060	—	—	145,605	268	260	528	Westmoreland.
31,307	—	—	—	8,502	—	—	—	150,525	236	39	275	Wilts.
1,132	—	—	—	67,868	—	—	—	712,545	579	111	600	Worcester.
997,915	—	—	—	771,390	2,506	—	—	2,917,019	4,435	4,769	9,204	York
9,066,974	650	12,258	21	2,715,702	69,629	475	21	34,752,547	41,476	19,432	60,908	TOTAL.

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TABLE 108—*continued.*

OUTPUT of MINERALS and the NUMBER of PERSONS EMPLOYED in each COUNTY at

COUNTY.	MINERALS										
	Barytes.	Chalk.	Chert and Flint.	Clays.	Coal.	Fluor Spar.	Gravel and Sand.	Gypsum.	Igneous Rocks.	Ironstone.	Lead Ore.
WALES:—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Anglesey	—	—	—	—	—	—	300	—	450	—	—
Brecon	—	—	—	—	—	—	2,390	—	—	—	—
Cardigan	—	—	—	5,620	—	—	400	—	—	—	—
Carmarthen	—	—	499	6,343	—	—	4,858	—	—	—	—
Carnarvon	—	—	—	30,527	—	—	6,497	—	413,109	—	—
Denbigh	—	—	—	208,051	—	—	2,295	--	16,712	—	—
Flint	—	—	1,392	153,716	—	—	5,268	--	—	—	—
Glamorgan	—	—	753	109,068	—	—	2,037	—	—	—	—
Merioneth	—	—	—	256	—	—	36	—	15,315	—	—
Montgomery	—	—	—	4,613	—	—	—	—	4,823	—	—
Pembroke	—	—	—	—	—	—	—	—	246,330	—	—
Radnor..	—	—	—	—	—	—	13	—	36,560	—	—
TOTAL	—	—	2,644	518,184	—	—	24,094	—	733,299	—	—
SCOTLAND:—											
Aberdeen	—	—	—	—	—	—	28,195	—	335,075	—	—
Argyll	—	—	—	—	—	—	—	—	63,128	—	—
Ayr	—	—	—	11,201	—	—	106	—	54,231	—	—
Banff	—	—	—	—	—	—	1,316	—	7,438	—	—
Berwick	—	—	—	—	—	—	—	—	3,515	—	—
Bute	—	—	—	—	—	—	120	—	5,579	—	—
Caithness	—	—	—	—	—	—	—	—	—	—	—
Clackmannan	—	—	—	—	—	—	—	—	5,294	—	—
Dumbarton	—	—	—	800	—	—	18,875	—	81,039	—	—
Dumfries	—	—	—	10,231	—	—	—	—	—	—	—
Edinburgh	—	—	—	44,000	—	—	5,902	—	109,756	—	—
Elgin	—	—	—	—	—	—	—	—	4,300	—	—
Fife	—	—	—	27,337	—	—	6,430	—	97,355	—	—
Forfar	—	—	—	4,340	—	—	—	—	35,129	—	—
Haddington	—	—	—	—	—	—	—	—	25,746	—	—
Inverness	—	—	—	—	—	—	—	—	—	—	—
Kincardine	—	—	—	—	—	—	—	—	10,873	—	—
Kinross	—	—	—	—	—	—	—	—	7,660	—	—
Kirkcudbright	—	—	—	—	—	—	—	—	53,633	—	—
Lanark..	—	—	—	150,789	80	—	201,014	—	144,441	—	—
Linlithgow	—	—	—	28,312	—	—	11,797	—	20,330	—	—
Nairn	—	—	—	—	—	—	—	—	36	—	—
Orkney	—	—	—	—	—	—	—	—	—	—	—
Peebles	—	—	—	—	—	—	—	—	5,469	—	—
Perth	—	—	—	—	—	—	—	—	55,009	—	—
Renfrew	—	—	—	817	21	—	5,400	—	46,660	—	—
Ross & Cromarty	—	—	—	—	—	—	—	—	—	—	—
Roxburgh	—	—	—	—	—	—	—	—	11,032	—	—
Selkirk..	—	—	—	—	—	—	—	—	1,128	—	—
Shetland	—	—	—	—	—	—	—	—	—	—	—
Stirling	—	—	—	19,000	—	—	41,428	—	53,445	—	—
Sutherland	—	—	—	—	—	—	—	—	—	—	—
Wigtown	—	—	—	—	—	—	—	—	960	—	—
TOTAL	—	—	—	305,827	101	—	320,583	—	1,241,291	—	—

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TABLE 108—*continued.*

QUARRIES worked under the QUARRIES ACT during the YEAR 1899—*continued.*

RAISED.									PERSONS EMPLOYED.			COUNTY.
Limestone.	Mica.	Ochre.	Phosphate of Lime.	Sandstone.	Slate.	Sulphate of Strontia.	Tin Ore (Dressed).	Total.	Inside.	Outside.	Total.	
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.				WALES:—
61,557	—	—	—	23,711	—	—	—	86,018	202	74	276	Anglesey.
300,151	—	—	—	75,413	20	—	—	377,974	378	78	456	Brecon.
—	—	—	—	6,123	5,338	—	—	17,481	42	8	50	Cardigan.
110,066	—	—	—	67,926	1,333	—	—	191,025	252	103	355	Carmarthen.
418,821	—	—	—	1,815	301,156	—	—	1,171,925	6,770	5,552	12,322	Carnarvon.
204,599	—	—	—	23,042	1,520	—	—	456,219	609	224	833	Denbigh.
39,472	—	—	—	7,421	—	—	—	207,269	263	91	354	Flint.
681,910	—	—	—	287,087	—	—	—	1,080,845	1,550	311	1,861	Glamorgan.
1,067	—	—	—	21,556	9,290	—	—	47,520	249	211	460	Merioneth.
9,371	—	—	—	4,229	3,190	—	—	26,226	107	76	183	Montgomery.
22,996	—	—	—	3,333	4,267	—	—	276,928	390	154	544	Pembroke.
35,372	—	—	—	65,814	—	—	—	137,759	268	105	373	Radnor.
1,885,384	—	—	—	587,470	326,114	—	—	4,077,189	11,080	6,987	18,067	TOTAL.
												SCOTLAND:—
2,766	—	—	—	9,756	160	—	—	375,952	1,030	1,070	2,100	Aberdeen.
6,072	—	—	—	350	30,580	—	—	103,130	643	597	1,240	Argyll.
14,369	—	—	—	149,359	—	—	—	229,266	381	295	676	Ayr.
38,355	—	—	—	1,700	—	—	—	48,809	109	28	137	Banff.
—	—	—	—	2,920	—	—	—	6,435	30	23	53	Berwick.
—	—	—	—	11,792	—	—	—	17,491	50	57	107	Bute.
—	—	—	—	22,089	940	—	—	23,029	378	100	478	Caithness.
—	—	—	—	15,605	—	—	—	20,899	44	41	85	Clackmannan.
—	—	—	—	30,355	—	—	—	131,069	342	111	453	Dumbarton.
17,800	—	—	—	245,912	—	—	—	273,743	720	614	1,334	Dumfries.
47,965	—	—	—	183,174	—	—	—	390,817	666	156	822	Edinburgh.
—	—	—	—	37,124	—	—	—	41,424	108	61	169	Elgin.
8,677	—	—	—	103,479	—	—	—	243,278	692	219	911	Fife.
—	—	—	—	142,948	—	—	—	182,417	372	603	975	Forfar.
25,764	—	—	—	11,560	—	—	—	63,070	113	16	129	Haddington.
—	—	—	—	530	—	—	—	530	5	—	5	Inverness.
—	—	—	—	7,187	—	—	—	18,060	65	56	121	Kincardine.
—	—	—	—	—	—	—	—	7,660	29	10	39	Kinross.
—	—	—	—	—	—	—	—	53,633	347	269	616	Kirkcudbright.
7,517	—	—	—	300,463	—	—	—	813,304	979	692	1,671	Lanark.
—	—	—	—	90,695	—	—	—	151,124	198	247	445	Linlithgow.
—	—	—	—	5,700	—	—	—	5,736	23	18	41	Nairn.
—	—	—	—	424	—	—	—	424	3	—	3	Orkney.
2,473	—	—	—	74	—	—	—	8,016	18	3	21	Peebles.
1,950	—	—	—	41,508	9,371	—	—	107,838	370	189	559	Perth.
38,059	—	—	—	68,413	—	—	—	159,370	457	24	481	Renfrew.
—	—	—	—	9,137	—	—	—	9,137	35	14	49	Ross & Cromarty.
15	—	—	—	937	—	—	—	12,014	43	5	48	Roxburgh.
—	—	—	—	—	—	—	—	1,128	5	2	7	Selkirk.
—	—	—	—	309	—	—	—	309	6	—	6	Shetland.
—	—	—	—	39,345	—	—	—	153,218	316	169	485	Stirling.
—	—	—	—	1,178	—	—	—	1,178	19	14	33	Sutherland
—	—	—	—	—	—	—	—	960	9	—	9	Wigtown
211,802	—	—	—	1,534,013	41,051	—	—	3,654,468	8,605	5,703	14,308	TOTAL.

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TABLE 108—*continued.*

OUTPUT of MINERALS and the NUMBER of PERSONS EMPLOYED in each COUNTY at

COUNTY.	MINERALS										
	Barytes.	Chalk.	Chert and Flint.	Clays.	Coal.	Fluor Spar.	Gravel and Sand.	Gypsum.	Igneous Rocks.	Ironstone.	Lead Ore.
IRELAND:—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Antrim	—	—	1,152	72,000	—	—	—	—	36,335	—	—
Armagh	—	—	—	—	—	—	6,100	—	6,810	—	—
Carlow	—	—	—	—	—	—	200	—	350	—	—
Cavan	—	—	—	—	—	—	—	—	—	—	—
Clare	—	—	—	—	—	—	16	—	500	—	—
Cork	—	—	—	13,000	—	—	5,872	—	—	—	—
Donegal	—	—	—	—	—	—	—	—	9,130	—	—
Down	—	—	—	—	—	—	1,800	—	77,369	—	—
Dublin	—	—	—	7,962	—	—	31,825	—	5,600	—	—
Fermanagh	—	—	—	—	—	—	—	—	—	—	—
Galway	—	—	—	—	—	—	—	—	—	—	—
Kerry	—	—	—	—	—	—	—	—	—	—	—
Kildare	—	—	—	—	—	—	—	—	—	—	—
Kilkenny	—	—	—	—	—	—	—	—	—	—	—
King's County	—	—	—	—	—	—	—	—	—	—	—
Leitrim	—	—	—	—	—	—	—	—	—	—	—
Limerick	—	—	—	—	—	—	—	—	200	—	—
Londonderry	—	—	—	—	—	—	—	—	26,841	—	—
Longford	—	—	—	—	—	—	10,150	—	—	—	—
Louth	—	—	—	—	—	—	1,922	—	1,920	—	—
Mayo	—	—	—	—	—	—	—	—	—	—	—
Meath	—	—	—	—	—	—	2,160	—	20	—	—
Monaghan	—	—	—	—	—	—	500	—	—	—	—
Queen's County	—	—	—	1,000	—	—	100	—	4,060	—	—
Roscommon	—	—	—	—	—	—	—	—	—	—	—
Sligo	—	—	—	—	—	—	—	—	—	—	—
Tipperary	—	—	—	—	—	—	170	—	—	—	—
Tyrone	—	—	—	—	—	—	3,700	—	6,800	—	—
Waterford	—	—	—	6,120	—	—	600	—	—	—	—
Westmeath	—	—	—	—	—	—	—	—	—	—	—
Wexford	—	—	—	—	—	—	—	—	1,500	—	—
Wicklow	—	—	—	—	—	—	940	—	30,488	—	—
TOTAL	—	—	1,152	100,082	—	—	66,055	—	207,923	—	—
ISLE OF MAN	—	—	—	7,000	—	—	2,862	—	10,188	—	—
Total for the United Kingdom ..	**1,000**	**4,673,574**	**66,395**	**11,861,210**	**9,413**	**50**	**1,740,085**	**54,237**	**4,613,464**	**3,408,755**	**9**
Total for preceding year	1,050	4,296,136	79,744	11,749,121	12,273	—	1,590,134	61,833	4,378,868	2,759,490	306

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TABLE 108—*continued.*

QUARRIES worked under the QUARRIES ACT during the YEAR 1899—*continued.*

RAISED.									PERSONS EMPLOYED.			COUNTY.
Limestone.	Mica.	Ochre.	Phosphate of Lime.	Sandstone.	Slate.	Sulphate of Strontia.	Tin Ore. (Dressed.)	Total.	Inside.	Outside.	Total.	
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.				IRELAND :—
241,575	—	—	—	693	—	—	—	351,755	510	293	803	Antrim.
4,620	—	—	—	—	—	—	—	17,530	61	76	137	Armagh.
4,628	—	—	—	—	—	—	—	5,178	23	13	36	Carlow
220	—	—	—	—	—	—	—	220	2	8	10	Cavan
—	—	—	—	10,794	—	—	—	11,310	61	93	154	Clare.
44,318	—	—	—	300	1,223	—	—	64,713	207	62	269	Cork.
6,035	—	—	—	500	—	—	—	15,665	66	47	113	Donegal.
5,330	—	—	—	4,650	—	—	—	89,149	343	407	750	Down.
58,010	—	—	—	2,010	—	—	—	105,407	290	70	360	Dublin.
3,261	—	—	—	—	—	—	—	3,261	23	6	29	Fermanagh.
749	—	—	—	80	—	—	—	829	24	5	29	Galway
12,496	—	—	—	—	103	—	—	12,599	60	20	80	Kerry.
2,379	—	—	—	—	—	—	—	2,379	14	1	15	Kildare.
11,439	—	—	—	640	285	—	—	12,364	63	50	113	Kilkenny
5,350	—	—	—	—	—	—	—	5,350	20	19	39	King's County.
—	—	—	—	600	—	—	—	600	5	—	5	Leitrim.
21,761	—	—	—	2,085	—	—	—	24,046	102	30	132	Limerick.
4,112	—	—	—	5	—	—	—	30,958	72	25	97	Londonderry
1,257	—	—	—	—	—	—	—	11,407	20	4	24	Longford.
8,032	—	—	—	—	—	—	—	11,874	54	9	63	Louth.
1,320	—	—	—	—	—	—	—	1,320	7	—	7	Mayo.
8,198	—	—	—	—	—	—	—	10,378	86	25	111	Meath.
6,500	—	—	—	—	—	—	—	7,000	45	12	57	Monaghan.
4,460	—	—	—	—	—	—	—	9,620	52	8	60	Queen's County.
—	—	—	—	173	—	—	—	173	4	3	7	Roscommon.
3,630	—	—	—	—	—	—	—	3,630	23	—	23	Sligo.
21,173	—	—	—	420	3,732	—	—	25,495	172	165	337	Tipperary.
6,157	—	—	—	4,783	—	—	—	21,440	127	81	208	Tyrone.
5,770	—	—	—	500	—	—	—	12,990	30	6	36	Waterford.
100	—	—	—	—	—	—	—	100	1	—	1	Westmeath.
15,467	—	—	—	380	100	—	—	17,447	33	17	50	Wexford.
—	—	—	—	—	—	—	—	31,428	276	77	353	Wicklow.
508,347	—	—	—	28,613	5,443	—	—	917,615	2,876	1,632	4,508	TOTAL.
9,272	—	—	—	1,827	19,005	—	—	50,154	122	82	204	ISLE OF MAN.
11,681,579	**650**	**12,258**	**21**	**4,867,625**	**461,242**	**475**	**21**	**43,451,973**	**64,159**	**33,836**	**97,995**	**Total for the United Kingdom.**
11,388,320	907	16,877	—	4,883,637	491,195	1,242	46	41,709,179	62,752	71,726	134,478	Total for preceding year.

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COUNTY SUMMARIES.—No. IV.—

TABLE 109.

OUTPUT of MINERALS from certain WORKINGS not included under the PROVISIONS of

COUNTY.	Arsenical Pyrites.	Bog Ore.	Iron Ore.	Phosphate of Lime.
ENGLAND :—	Tons.	Tons.	Tons.	Tons.
Bedford	—	—	—	1,118*
Cambridge	—	—	—	307*
Chester	—	—	—	—
Cornwall	—	—	—	—
Devon	90	—	—	—
Durham	—	—	—	—
Gloucester	—	—	—	—
Lancaster	—	—	—	—
Leicester	—	—	348,687	—
Lincoln	—	—	424,396	—
Northampton	—	—	336,287	—
Oxford	—	—	211,541	—
Rutland	—	—		
Stafford	—	—	—	—
Worcester	—	—	—	—
York	—	—	—	—
TOTAL	90	—	1,320,911	1,425
IRELAND :—				
Antrim	—	—	—	—
Donegal	—	3,816	—	—
King's County	—	505	—	—
Londonderry	—	—	—	—
TOTAL	—	4,321	—	—
Total for the United Kingdom	**90**	**4,321**	**1,320,911**	**1,425**
Total for preceding year	321	5,418	1,349,302	1,550

* Estimated from Railway Returns.

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SHALLOW WORKINGS, BRINE WELLS, &c.

TABLE 109.

the MINES REGULATION ACTS or the QUARRIES ACT during the YEAR 1899.

Salt from Brine.	Sulphate of Strontia.	Tin Ore.	Wolfram.	Total.	COUNTY.
Tons.	Tons.	Tons.	Tons.	Tons.	ENGLAND :—
—	—	—	—	1,118	Bedford.
—	—	—	—	307	Cambridge.
1,189,026†	—	—	—	1,189,026	Chester.
—	—	709	5	714	Cornwall.
—	—	—	—	90	Devon.
197,610	—	—	—	197,610	Durham.
—	12,154	—	—	12,154	Gloucester.
120,922	—	—	—	120,922	Lancaster.
—	—	—	—	348,687	Leicester.
—	—	—	—	424,396	Lincoln
—	—	—	—	336,287	Northampton.
—	—	—	—	211,541	Oxford. Rutland.
‡	—	—	—	—	Stafford.
171,562	—	—	—	171,562	Worcester.
44,481	—	—	—	44,481	York.
1,723,601	12,154	709	5	3,058,895	TOTAL.
					IRELAND :—
12,282	—	—	—	12,282	Antrim.
—	—	—	—	3,816	Donegal
—	—	—	—	505	King's County.
—	—	—	—	—	Londonderry.
12,282	—	—	—	16,603	TOTAL.
1,735,883	**12,154**	**709**	**5**	**3,075,498**	**Total for the United Kingdom.**
1,695,895	11,699	746	2	3,065,083	Total for preceding year.

† Including Stafford. ‡ Included in Chester.

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COUNTY SUMMARIES.—No. V.—

Table 110.

Total Output of Minerals and Total Number of Persons Employed

COUNTY.	Minerals										
	Barytes.	Chalk.	Chert and Flint.	Clays.	Coal.	Copper Ore and Copper Precipitate.	Gravel and Sand.	Gypsum.	Igneous Rocks.	Iron Ore.	Iron Pyrites.
ENGLAND:—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Bedford	—	61 745	—	166,829	—	—	78,420	—	—	—	—
Berks	—	5,838	121	110,953	—	—	18,866	—	—	—	—
Buckingham ..	—	360	—	8,680	—	—	7,000	—	—	—	—
Cambridge	—	46,023	—	244,380	—	—	2,520	—	—	—	—
Chester	—	—	—	20,967	721,431	—	36,785	—	—	—	—
Cornwall	—	—	432	564,594	—	5,172	1,825	—	222,614	—	—
Cumberland ..	32	—	—	75,427	2,100,418	—	12,686	43,858	103,923	1,137,750	—
Derby	230	—	3,533	519,206	14,595,052	—	30,218	11,557	—	3,526	2,413
Devon	1,000	20	2,009	290,991	—	990	7,050	—	48,651	780	—
Dorset	—	1,420	—	148,184	—	—	35,055	—	—	—	—
Durham	2,100	—	—	744,453	34,870,675	—	20,471	—	73,644	16,960	—
Essex	—	371,176	10,341	134,433	—	—	38,159	—	—	—	—
Gloucester	—	—	1,000	254,173	1,528,014	—	2,940	—	—	26,101	—
Hants	—	224,742	15	64,079	—	—	13,349	—	—	—	—
Hereford	—	—	—	8,270	—	—	1,335	—	—	—	—
Hertford	—	46,888	150	59,760	—	—	105,142	—	—	—	—
Huntingdon	—	—	—	891,834	—	—	—	—	—	—	—
Kent	—	3,220,961	21,908	296,863	—	—	202,137	—	—	—	—
Lancaster	—	—	—	1,356,492	24,387,525	7	24,128	—	8,235	670,924	712
Leicester	—	—	—	607,658	1,888,819	—	7,500	—	1,099,386	677,667	—
Lincoln	—	37,821	—	180,071	—	—	4,774	—	—	2,094,330	—
Middlesex	—	80,030	690	15,625	—	—	13,902	—	—	—	—
Monmouth	—	—	—	169,135	10,103,067	—	—	—	—	12,794	—
Norfolk	—	23,986	6,470	22,591	—	—	84,474	—	—	—	—
Northampton ..	—	—	—	323,708	—	—	39,213	—	—	1,779,710	—
Northumberland ..	7,309	—	—	302,546	11,184,072	—	42,927	—	108,682	—	—
Nottingham	—	—	—	339,223	8,224,441	—	126,300	77,812	—	20	90
Oxford	—	1,457	360	30,922	—	—	2,467	—	—	211,541	—
Rutland	—	—	—	2,700	—	—	—	—	—	†	—
Salop	5,680	—	—	131,748	766,219	—	9,740	—	272,037	28,511	160
Somerset	—	980	—	178,153	983,973	—	5,970	5,875	—	2,649	—
Stafford	—	—	—	1,790,480	13,887,032	—	175,878	48,998	165,529	1,069,758	735
Suffolk	—	12,185	1,982	71,396	—	—	3,791	—	—	—	—
Surrey	—	266,674	4,474	51,829	—	—	62,206	—	—	—	—
Sussex	—	218,468	10,923	54,994	—	—	18,630	18,454	—	—	—
Warwick	—	—	—	651,433	2,873,098	—	41,405	—	139,352	30,497	5,709
Westmoreland ..	658	—	—	50	810	—	—	6,009	66,198	—	—
Wilts	—	7,089	—	29,735	—	—	6,289	—	—	67,803	—
Worcester	—	—	—	718,959	843,126	—	20,351	—	16,045	3,881	—
York	2,358	50,249	630	1,352,995	26,907,132	—	40,248	—	180,800	5,672,166	—
Total ..	19,367	4,678,132	65,038	13,045,621	155,864,884	6,169	1,334,153	212,563	2,505,096	13,507,168	9,819

[a] Phosphate of Lime. [b] Rock Salt. [c] Brine Salt. [d] Tin Ore. [e] Uranium Ore. [f] Wolfram.

* Exclusive of the persons employed at the workings included in Table 10[a] about

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ALL MINES, QUARRIES, &c.

TABLE 110.

in each COUNTY at all MINES and QUARRIES during the Year 1899.

RAISED.								PERSONS EMPLOYED.*			COUNTY.
Lead Ore.	Limestone.	Oil Shale.	Sandstone.	Slate.	Zinc.	Other Minerals.	Total.	Below Ground or Inside Quarries.	Above Ground or Outside Quarries.	Total.	
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.				ENGLAND:—
—	2,750	—	150	—	—	1,118[a]	311,012	447	59	506	Bedford.
—	—	—	3,335	—	—	—	139,113	264	28	292	Berks.
—	1,193	—	—	—	—	—	17,233	55	21	76	Buckingham.
—	750	—	—	—	—	328[a]	294,001	273	56	329	Cambridge.
—	5,486	—	127,973	—	—	44,832[b] 1,189,026[c]	2,136,499	2,695	794	3,489	Chester.
—	4,368	—	5,182	32,408	42	6,389[d] 7[e] 94[f] 650[g] 1,361[h] 9,679[i] 419[j]	855,236	7,189	4,221	11,410	Cornwall.
825	534,417	—	52,352	4,666	7,184	—	4,063,538	10,851	3,709	14,560	Cumberland.
4,275	1,761,270	—	165,366	—	453	275[j] 683[k] 87[l]	17,098,126	38,384	10,194	48,578	Derby.
—	527,026	—	71,487	13,901	—	3[d] 2,468[h] 3,840[i] 1,604[j]	971,820	1,952	1,133	3,085	Devon
—	519,214	—	370	—	—	—	704,252	1,295	743	2,038	Dorset.
3,361	1,944,207	—	82,048	—	92	197,610[c] 100[k]	37,955,721	85,177	26,543	111,720	Durham.
—	—	—	—	—	—	—	554,109	342	83	425	Essex.
—	171,270	—	123,534	—	—	1,895[j] 12,154[m]	2,121,081	6,827	1,948	8,775	Gloucester.
—	320	—	3,162	—	—	—	305,667	320	60	380	Hants.
—	13,646	—	1,665	—	—	—	24,916	55	1	56	Hereford.
—	—	—	—	—	—	—	211,940	252	67	319	Hertford.
—	—	—	—	—	—	—	891,834	365	40	405	Huntingdon.
—	149,941	—	1,594	—	—	—	3,893,424	1,852	750	2,602	Kent.
—	600,480	—	820,232	20,156	—	99,405[b] 120,922[c]	28,109,218	70,941	19,738	90,679	Lancaster.
—	142,076	—	—	225	—	—	4,423,331	7,682	2,855	10,537	Leicester.
—	44,423	—	130	—	—	—	2,361,548	997	229	1,226	Lincoln.
—	—	—	—	—	—	—	110,247	43	10	53	Middlesex.
—	79,323	—	51,036	—	—	—	10,415,355	27,362	4,971	32,333	Monmouth.
—	1,402	—	3,879	—	—	—	142,802	292	52	344	Norfolk.
—	154,305	—	8,631	—	—	—	2,305,567	1,602	205	1,807	Northampton.
134	103,528	—	132,462	—	604	—	11,882,264	31,813	7,575	39,388	Northumberland.
—	91,485	—	5,907	—	—	—	8,925,278	20,974	5,419	26,393	Nottingham.
—	10,442	—	3,638	—	—	—	214,549	141	43	184	Oxford.
—	1,687	—	5,377	—	—	—	55,142	58	21	79	Rutland.
1,468	172,651	—	36,757	—	737	—	1,425,708	3,681	1,806	5,487	Salop.
—	480,158	—	58,910	1,750	—	9,866[i] 475[m]	1,728,759	5,509	1,355	6,864	Somerset.
—	313,731	205	64,057	—	—	—	17,516,403	35,830	12,332	48,162	Stafford.
—	—	—	—	—	—	—	89,354	249	38	287	Suffolk.
—	6,629	—	20,572	—	—	—	412,386	378	199	577	Surrey.
—	—	—	14,545	—	—	—	336,014	479	146	625	Sussex.
—	227,959	—	116,410	—	—	—	4,085,893	8,019	2,421	10,440	Warwick.
1,198	71,492	—	3,066	2,953	—	—	152,454	410	419	829	Westmoreland.
—	196,795	—	8,502	—	—	—	316,013	1,213	204	1,417	Wilts.
—	49,021	—	67,868	—	—	171,562[c]	1,890,813	2,420	762	3,182	Worcester.
1,059	997,915	—	940,951	5,656	—	44,481[c] 5,820[m]	38,202,480	85,717	27,379	113,096	York.
12,320	9,371,359	205	3,001,206	81,715	9,112	1,927,153	205,651,080	464,405	138,629	603,034	Total.

[a] Whom there is no information available. [b] Mica. [c] Arsenic. [d] Arsenical Pyrites. [e] Ochre. [f] Fluor Spar. [g] Manganese Ore. [h] Sulphate of Strontia. [i] Alum Shale.

† Included with Oxford.

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TABLE 110—*continued.*

TOTAL OUTPUT of MINERALS and TOTAL NUMBER of PERSONS EMPLOYED

COUNTY.	MINERALS										
	Barytes.	Chalk.	Chert and Flint.	Clays.	Coal.	Copper Ore and Copper Precipitate.	Gravel and Sand.	Gypsum.	Igneous Rocks.	Iron Ore.	Iron Pyrites.
WALES :—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Anglesey	—	—	—	—	—	450	300	—	450	—	—
Brecon	—	—	—	—	383,465	—	25,919	—	—	379	—
Cardigan	—	—	—	5,620	—	—	400	—	—	—	—
Carmarthen.. ..	—	—	499	12,036	1,207,205	—	4,858	—	—	—	—
Carnarvon	—	—	—	30,527	—	620	6,497	—	413,109	—	—
Denbigh	—	—	—	264,962	2,512,104	—	2,205	—	28,840	100	—
Flint	—	—	1,392	181,828	682,630	—	5,268	—	—	1,019	—
Glamorgan	—	—	753	217,147	28,116,941	—	2,037	—	—	6,817	—
Merioneth	—	—	—	256	—	526	36	—	15,315	—	—
Montgomery ..	1,092	—	—	4,613	—	21	—	—	4,823	—	—
Pembroke	—	—	—	—	59,419	—	—	—	246,330	—	—
Radnor	—	—	—	—	—	—	13	—	36,560	—	—
Total ..	1,092	—	2,644	717,009	32,961,764	1,617	47,623	—	745,427	8,315	—
SCOTLAND :—											
Aberdeen	—	—	—	—	—	—	28,195	—	335,075	—	—
Argyll..	—	—	—	—	*	—	—	—	66,128	—	—
Ayr	—	—	—	124,328	3,809,313	—	106	—	54,231	354,333	—
Banff	—	—	—	—	—	—	1,316	—	7,438	—	—
Berwick	—	—	—	—	—	—	—	—	3,515	—	—
Bute	—	—	—	—	—	—	120	—	5,579	—	—
Caithness	—	—	—	—	—	—	—	—	—	—	—
Clackmannan ..	—	—	—	1,617	366,697	—	—	—	5,294	—	—
Dumbarton	—	—	—	30,385	511,199	—	18,575	—	81,089	38,722	—
Dumfries	—	—	—	10,251	†154,786	—	—	—	—	—	—
Edinburgh	—	—	—	97,810	1,267,521	—	5,902	—	109,756	44,668	—
Elgin	—	—	—	—	—	—	—	—	4,300	—	—
Fife	—	—	—	62,999	4,927,489	—	6,430	—	97,355	25,269	—
Forfar..	—	—	—	4,340	—	—	—	—	35,129	—	—
Haddington	—	—	—	30,085	450,588	—	—	—	25,746	—	—
Inverness	—	—	—	—	—	—	—	—	—	—	—
Kincardine	—	—	—	—	—	—	—	—	10,873	—	—
Kinross	—	—	—	3,500	1,600	—	—	—	7,660	—	—
Kirkcudbright ..	—	—	—	—	—	—	—	—	53,633	—	—
Lanark	—	—	—	587,379	16,416,834	—	201,014	—	144,441	169,528	—
Linlithgow	—	—	—	59,602	948,748	—	11,797	—	20,330	45,298	—
Nairn	—	—	—	—	—	—	—	—	36	—	—
Orkney	—	—	—	—	—	—	—	—	—	—	—
Peebles	—	—	—	—	293	—	—	—	5,469	—	—
Perth	—	—	—	—	560	—	—	—	55,009	—	—
Renfrew	927	—	—	77,816	12,512	—	5,400	—	46,660	162,755	—
Ross & Cromarty ..	—	—	—	—	—	—	—	—	—	—	—
Roxburgh	—	—	—	—	—	—	—	—	11,062	—	—
Selkirk	—	—	—	—	—	—	—	—	1,128	—	—
Shetland	—	—	—	—	—	—	—	—	—	—	—
Stirling	—	—	—	98,992	2,969,992	—	41,428	—	53,445	3,012	—
Sutherland	—	—	—	—	4,581	—	—	—	—	—	—
Wigtown	—	—	—	—	—	—	—	—	960	—	—
Total ..	927	—	—	1,189,284	31,142,713	—	320,563	—	1,241,291	843,585	—

* Included with Dumfries. † Including Argyll.

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TABLE 110—*continued.*

in each COUNTY at all MINES and QUARRIES during the Year 1899—*continued.*

RAISED.								PERSONS EMPLOYED.			COUNTY.
Lead Ore.	Limestone.	Oil Shale.	Sandstone.	Slate.	Zinc.	Other Minerals.	Total.	Below Ground or Inside Quarries.	Above Ground or Outside Quarries.	Total.	
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.				WALES:—
—	61,557	—	23,711	—	57	1,150[J]	87,675	306	243	549	Anglesey.
68	300,151	—	75,413	20	—	—	785,410	1,654	314	1,968	Brecon.
598	—	—	6,123	5,338	1,819	—	19,898	370	312	682	Cardigan.
933	110,066	—	67,926	1,333	9	—	1,404,365	4,208	1,154	5,362	Carmarthen.
698	418,821	—	1,815	309,426	1,477	—	1,182,960	7,202	6,142	13,344	Carnarvon.
1,963	204,599	—	23,042	6,296	3,273	—	3,047,514	8,789	2,349	11,138	Denbigh.
7,617	40,263	2,375	7,421	—	4,728	—	934,561	3,069	1,122	4,191	Flint.
—	681,910	—	292,137	—	—	—	29,317,742	81,195	14,822	96,017	Glamorgan.
—	1,067	—	21,856	160,565	—	{ 3,047[*] 328[I] }	202,996	2,852	2,965	5,817	Merioneth.
616	9,371	—	4,229	5,581	24	—	30,170	235	238	473	Montgomery.
—	22,998	—	3,333	4,267	—	—	336,347	683	263	946	Pembroke.
—	35,372	—	65,814	—	—	—	137,759	270	105	375	Radnor.
12,498	1,886,195	2,375	562,820	492,626	11,387	4,525	37,487,917	110,833	30,029	140,862	Total.
											SCOTLAND:—
—	2,766	—	9,756	160	—	—	375,952	1,030	1,070	2,100	Aberdeen.
—	6,072	—	350	30,580	—	—	103,130	692	608	1,300	Argyll.
—	14,369	1,841	151,955	—	—	—	4,510,476	11,235	2,269	13,504	Ayr.
—	38,355	—	1,700	—	—	—	48,809	109	28	137	Banff.
—	—	—	2,920	—	—	—	6,435	30	23	53	Berwick.
—	—	—	11,792	—	—	—	17,491	50	57	107	Bute.
—	—	—	22,089	940	—	—	23,029	378	100	478	Caithness.
—	—	—	15,605	—	—	—	389,413	877	194	1,071	Clackmannan.
—	11,398	—	30,355	—	—	—	721,973	1,884	640	2,524	Dumbarton.
1,848	19,600	—	245,912	—	34	—	432,411‡	1,129	795	1,924	Dumfries.
—	202,699	628,490	183,174	—	—	—	2,539,960	5,535	1,363	6,898	Edinburgh.
—	—	—	37,124	—	—	—	41,424	108	61	169	Elgin.
—	83,716	—	105,479	—	—	—	5,306,737	11,966	2,904	14,870	Fife.
—	—	—	142,948	—	—	—	182,417	372	603	975	Forfar.
—	25,764	—	11,560	—	—	—	543,743	1,070	192	1,262	Haddington.
—	—	—	530	—	—	—	530	5	—	5	Inverness.
—	—	—	7,187	—	—	—	18,060	65	56	121	Kincardine.
—	—	—	—	—	—	—	12,760	41	26	67	Kinross.
—	—	—	—	—	—	—	53,633	347	269	616	Kirkcudbright.
369	56,335	76,246	334,282	—	—	—	17,986,428	38,864	8,761	47,625	Lanark.
—	1,930	1,499,378	90,685	—	—	—	2,677,768	4,639	1,152	5,791	Linlithgow.
—	—	—	5,700	—	—	—	5,736	23	18	41	Nairn.
—	—	—	424	—	—	—	424	3	—	3	Orkney.
—	2,473	—	74	—	—	—	8,309	20	4	24	Peebles.
—	1,950	—	41,508	9,371	—	—	106,398	372	189	561	Perth.
—	40,757	—	73,112	—	—	—	419,939	1,064	164	1,228	Renfrew.
—	—	—	9,137	—	—	—	9,137	35	14	49	Ross & Cromarty.
—	15	—	987	—	—	—	12,014	43	5	48	Roxburgh.
—	—	—	—	—	—	—	1,128	5	2	7	Selkirk.
—	—	—	309	—	—	—	309	6	—	6	Shetland.
—	19,518	2,288	52,376	—	—	—	2,541,051	5,931	1,739	7,670	Stirling.
—	—	66	1,178	—	—	—	5,825	37	18	55	Sutherland.
—	—	—	—	—	—	—	960	9	—	9	Wigtown.
2,217	527,717	2,208,249	1,568,158	41,051	34	—	39,105,809	87,974	23,324	111,298	Total.

‡ Including Coal of Argyll. [J] Ochre. [I] Manganese Ore. [*] Gold Ore.

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TABLE 110—*continued.*

TOTAL OUTPUT of MINERALS and TOTAL NUMBER of PERSONS EMPLOYED

COUNTY.	MINERALS										
	Barytes.	Chalk.	Chert and Flint.	Clays.	Coal.	Copper Ore and Copper Precipitate.	Gravel and Sand.	Gypsum.	Igneous Rocks.	Iron Ore.	Iron Pyrites.
IRELAND :—	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Antrim	—	—	1,152	72,000	6,111	—	—	—	36,335	102,262	—
Armagh	—	—	—	—	—	—	6,100	—	6,810	—	—
Carlow	—	—	—	—	—	—	200	—	350	—	—
Cavan	—	—	—	—	—	—	—	—	—	—	—
Clare	—	—	—	—	—	—	16	—	500	—	—
Cork	3,278	—	—	13,000	—	—	5,872	—	—	—	—
Donegal	—	—	—	—	—	—	—	—	9,130	—	—
Down	—	—	—	—	—	—	1,800	—	77,369	—	—
Dublin	—	—	—	7,962	—	—	31,825	—	5,800	—	—
Fermanagh	—	—	—	—	—	—	—	—	—	—	—
Galway	—	—	—	—	—	—	—	—	—	—	—
Kerry	—	—	—	—	—	—	—	—	—	—	—
Kildare	—	—	—	—	—	—	—	—	—	—	—
Kilkenny	—	—	—	—	60,256	—	—	—	—	—	—
King's County ..	—	—	—	—	—	—	—	—	—	—	—
Leitrim	—	—	—	—	2,160	—	—	—	—	—	—
Limerick	—	—	—	—	—	—	—	—	200	—	—
Londonderry ..	—	—	—	—	—	—	—	—	26,841	—	—
Longford	—	—	—	—	—	—	10,150	—	—	—	—
Louth	—	—	—	—	—	—	1,922	—	1,920	—	—
Mayo	—	—	—	—	—	—	—	—	—	—	—
Meath	—	—	—	—	—	—	2,160	—	20	—	—
Monaghan	—	—	—	—	—	—	500	—	—	—	—
Queen's County ..	—	—	—	1,224	18,222	—	100	—	4,060	—	—
Roscommon.. ..	—	—	—	—	6,808	—	—	—	—	—	—
Sligo	—	—	—	—	—	—	—	—	—	—	—
Tipperary	—	—	—	—	12,864	—	170	—	—	—	—
Tyrone	—	—	—	5,637	18,999	—	3,700	—	6,800	—	—
Waterford	—	—	—	6,120	—	—	600	—	—	—	—
Westmeath	—	—	—	—	—	—	—	—	—	—	—
Wexford	—	—	—	—	—	—	—	—	1,500	—	—
Wicklow	—	—	—	—	—	533	940	—	30,488	—	2,411
Total ..	3,278	—	1,152	105,943	125,420	533	66,055	—	207,923	102,262	2,411
ISLE OF MAN ..	—	—	—	7,000	—	—	2,862	—	10,188	—	—
Total for the United Kingdom.	**24,664**	**4,678,132**	**98,234**	**15,064,857**	**220,094,781**	**8,319**	**1,771,276**	**212,563**	**4,766,925**	**14,461,330**	**12,230**
Total for preceding year.	22,225	4,298,014	82,057	14,738,474	202,054,516	9,131	1,625,980	196,028	4,478,308	14,176,938	12,108

[b] Rock Salt. [a] Brine Salt [j] Ochre.

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TABLE 110—*continued.*

in each COUNTY at all MINES and QUARRIES during the Year 1899—*continued.*

RAISED.								PERSONS EMPLOYED.			COUNTY
Lead Ore.	Limestone.	Oil Shale.	Sandstone.	Slate.	Zinc.	Other Minerals.	Total.	Below Ground or Inside Quarries.	Above Ground or Outside Quarries.	Total.	
Tons.	Tons.	Tons.	Tons.	Tons.	Tons	Tons.	Tons.				IRELAND:—
—	241,575	—	693	—	—	34,773[b] 8,009[p] 12,282[c]	515,192	898	376	1,274	Antrim.
—	4,629	—	—	—	—	—	17,580	61	76	137	Armagh.
—	4,628	—	—	—	—	—	5,178	23	13	36	Carlow.
—	220	—	—	—	—	—	220	2	8	10	Cavan.
—	—	—	10,794	—	—	—	11,310	61	93	154	Clare.
—	44,318	—	300	1,223	—	—	67,991	255	165	420	Cork.
—	6,085	—	500	—	—	3,816[q]	19,481	69	53	122	Donegal.
29	5,330	—	4,650	—	—	—	89,178	346	409	755	Down.
—	58,010	—	2,010	—	—	—	105,407	290	70	360	Dublin.
—	3,261	—	—	—	—	—	3,261	23	6	29	Fermanagh.
—	749	—	80	—	—	—	829	24	5	29	Galway.
—	12,496	—	—	103	—	—	12,599	60	20	80	Kerry
—	2,379	—	—	—	—	—	2,379	14	1	15	Kildare
—	11,439	—	640	285	—	—	72,620	351	147	498	Kilkenny.
—	5,350	—	—	—	—	505[q]	5,855	20	19	39	King's County.
—	—	—	600	—	—	—	2,760	26	4	30	Leitrim.
—	21,761	—	2,085	—	—	—	24,046	102	30	132	Limerick.
—	4,112	—	5	—	—	—	30,958	72	25	97	Londonderry.
—	1,257	—	—	—	—	—	11,407	20	4	24	Longford.
—	8,032	—	—	—	—	—	11,874	54	9	63	Louth.
—	1,320	—	—	—	—	—	1,320	7	—	7	Mayo.
—	8,198	—	—	—	—	—	10,378	86	25	111	Meath.
—	6,500	—	—	—	—	—	7,000	45	12	57	Monaghan.
—	4,460	—	—	—	—	—	28,066	244	62	306	Queen's County.
—	—	—	173	—	—	—	6,981	55	24	79	Roscommon.
—	3,630	—	—	—	—	—	3,630	23	—	23	Sligo.
—	21,173	—	420	3,732	—	—	38,259	253	198	451	Tipperary.
—	6,157	—	4,783	—	—	—	46,076	202	113	315	Tyrone.
—	5,770	—	500	—	—	—	12,990	30	6	36	Waterford.
—	100	—	—	—	—	—	100	1	—	1	Westmeath.
—	15,467	—	380	100	—	—	17,447	33	17	50	Wexford.
11	—	—	—	—	—	1,105[j]	35,488	310	88	398	Wicklow.
40	508,347	—	28,613	5,443	—	60,490	1,217,910	4,060	2,078	6,138	Total.
3,924	9,272	—	1,827	19,005	2,602	—	56,680	514	315	829	ISLE OF MAN.
30,999	**12,302,890**	**2,210,829**	**5,212,624**	**639,240**	**23,135**	**1,992,168**	**283,519,396**	**667,786**	**194,375**	**862,161**	**Total for the United Kingdom.**
32,965	11,980,578	2,137,999	5,242,115	668,859	23,552	1,970,730	263,748,944	650,049	225,554	875,603	Total for preceding year.

[p] Alum Clay. [q] Bog Ore.

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PARTICULARS CONCERNING EACH KIND OF MINERAL.

Alum Clay.

ALUM CLAY or BAUXITE occurs in beds between sheets of Tertiary basalt in County Antrim. The production of alumina from alum clay or bauxite, and the extraction of the metal in the electric furnace, form a new branch of industry which was started in the United Kingdom by the British Aluminium Co., Ltd. The alumina is prepared at works near Larne, County Antrim, and then despatched to Foyers in Inverness, where abundant water power enables electricity to be generated cheaply. The Foyers installation is so far the largest water-power plant in the United Kingdom.

The quantity of alumina extracted at the Larne works was about 1,500 tons, value £28,000; some of this was used in producing about 550 tons of aluminium, value £71,125, and the remainder was sold for the purpose of making sulphate of alumina.

TABLE 111.

OUTPUT and VALUE of ALUM CLAY.

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mines.
IRELAND.			
ULSTER (Co. Antrim):		Tons.	£
Cargan and Evishacrow	British Aluminium Co., Ltd.	8,009	1,871
Irish Hill, Straid	Bauxite Co., Ltd.		
Elginney	Antrim Iron Ore Co., Ltd....		
Tuftarney, Newtown—Crommelin ...	Crommelin Mining Co., Ltd.		
Total for 1899		**8,009**	**1,871**
Total for preceding Year		12,402	2,898

TABLE 112.

OUTPUT and VALUE of ALUM CLAY in the United Kingdom, from the Year 1877 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	No return	—	1882	8,389	5,877	1891	10,763	3,228
1874	„	—	1883	13,478	10,108	1892	7,322	1,860
1875	„	—	1884	8,560	4,280	1893	8,740	4,150
1876	„	—	1885	9,030	3,657	1894	7,970	5,618
1877	2,763	Not given	1886	8,262	2,478	1895	10,408	2,506
1878	3,426	„	1887	4,169	1,040	1896	7,249	1,918
1879	3,657	„	1888	9,666	4,833	1897	13,327	2,823
1880	3,470	„	1889	9,150	5,490	1898	12,402	2,898
1881	7,732	„	1890	11,527	5,763	**1899**	**8,009**	**1,871**

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ALUMINIUM MAKERS in the UNITED KINGDOM.

Owner.	Situation of Works.	Postal Address.
The British Aluminium Co., Ltd. ...	Larne Harbour, Co. Antrim	Head Office, 9, Victoria Street, London, S.W.
	Foyers, Inverness	

Alum Shale.

ALUM SHALE is obtained in small quantities in Yorkshire from a bed lying between two seams of the Stanley main bed of coal in the Upper Carboniferous rocks.

TABLE 113.

OUTPUT and VALUE of ALUM SHALE.

County.	Quantity.	Value at the Mines.
	Tons.	£
ENGLAND:		
York, East and West Ridings	5,820	728

TABLE 114.

OUTPUT and VALUE of ALUM SHALE in the United Kingdom, from the Year 1876 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	No return	—	1882	8,442	1,055	1891	5,474	684
1874	,,	—	1883	8,288	1,036	1892	2,922	365
1875	,,	—	1884	1,960	245	1893	2,115	264
1876	4,518	Not given	1885	2,331	292	1894	3,972	496
1877	19,735	,,	1886	2,992	374	1895	2,063	258
1878	6,733	,,	1887	2,586	323	1896	Nil	—
1879	4,097	,,	1888	1,984	248	1897	611	76
1880	6,695	,,	1889	4,188	523	1898	13,617	1,702
1881	7,661	,,	1890	6,420	802	1899	5,820	728

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Antimony Ore.

ANTIMONY ORE has not been produced in the United Kingdom since 1892; in previous years small quantities were raised from veins in Scotland and North Cornwall.

TABLE 115.

OUTPUT and VALUE of ANTIMONY ORE in the United Kingdom since the Year 1888.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons. cwts.	£		Tons.	£		Tons.	£
1888	0 7¾	7	1892	6	98	1896	Nil	—
1889	67 0	900	1893	Nil	—	1897	Nil	—
1890	14 0	200	1894	Nil	—	1898	Nil	—
1891	15¼ 0	250	1895	Nil	—	1899	Nil	—

TABLE 116.

PRICES of METALLIC ANTIMONY per TON in the LONDON MARKET.

	£ s. d.		£ s. d.
Highest price (in June)	40 0 0	Lowest price (in January)	36 10 0
Average of monthly prices in 1899 ...	38 18 3	Average of monthly prices in preceding year.	34 13 8

LIST of ANTIMONY SMELTERS and REFINERS in the UNITED KINGDOM.

Owners of Smelting Works.	Situation of Works.	Postal Address.
Cookson & Co.	Willington Quay	Bank Chambers, Sandhill, Newcastle-on-Tyne.
Hallett and Fry	London	202, Rotherhithe Street, London, S.E.
Johnson, Matthey, & Co., Ltd. ...	London	Hatton Garden, E.C.
Magnesium Metal Co	Patricroft	Patricroft, near Manchester.
Pratt, J. J., and Sons	London	79, Queen Street, E.C., and 305, Kingsland Road, N.E.
Roddick, Alfred, & Co.	London	Duncan Street, Islington, N.

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Arsenical Pyrites.

ARSENICAL PYRITES is obtained at mines in Cornwall and Devon. Much of it is treated for the sole purpose of making white arsenic (arsenious acid); in addition, there is the arsenical soot produced by the calcination of tin and copper ores containing arsenical pyrites. This product is either sold in the crude state to refiners or is refined at the mines.

TABLE 117.

SUMMARY of OUTPUT.

	Quantity.			Total Value.
	From Mines.	From Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Cornwall	9,679	—	9,679	7,548
Devon	3,750	90	3,840	4,590
Total for 1899	**13,429**	**90**	**13,519**	**12,138**
Total for preceding Year	10,823	321	11,144	8,144

TABLE 118.

DETAILS of OUTPUT from MINES.

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
CORNWALL:		Tons.	£
Boscawen, Chacewater	W. J. Trythall	11	2
Combe and Danescombe Valley, Calstock.	Combe and Danescombe Arsenic Co., Ltd.	797	1,192
Dolcoath, Camborne	Dolcoath Mine, Ltd.	6	2
Great Wheal Busy, Chacewater ...	W. J. Trythall	5,494	1,961
Prince of Wales, Calstock	East Cornwall Tin Mining Syndicate, Ltd.	377	206
South Wheal Crofty	South Wheal Crofty Mining Co. ...	23	14
Trelawney, St. Ive	Anglo-Peninsula Mining and Chemical Co. Ltd.	2,621	3,931
West Wheal Camborne, Calstock ...	T. Westlake & Co.	350	240
Total		9,679	7,548

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ARSENICAL PYRITES.—DETAILS of OUTPUT from MINES—*continued.*

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
DEVONSHIRE:		Tons.	£
Wheal Crebor, Tavistock	Wheal Crebor Mining Co.	703	1,488
Wheal Friendship, Tavistock ...	Devon Arsenic Manufacturing Co. ...	3,047	3,047
Total		3,750	4,535

TABLE 119.

OUTPUT and VALUE of ARSENICAL PYRITES in the United Kingdom, from the Year 1875 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	No returns	—	1882	12,564	11,614	1891	5,095	4,370
1874	„	—	1883	1,300	1,092	1892	4,497	4,988
1875	12,948	Not given	1884	1,762	1,143	1893	3,036	2,948
1876	12,949	„	1885	1,911	1,573	1894	3,288	3,823
1877	5,341	„	1886	4,918	7,749	1895	2,951	2,785
1878	3,638	„	1887	4,364	3,205	1896	8,808	8,007
1879	2,596	„	1888	5,325	4,240	1897	13,137	10,734
1880	5,188	„	1889	7,688	7,317	1898	11,144	8,144
1881	14,321	„	1890	5,114	4,414	**1899**	**13,519**	**12,138**

Arsenic.

(Obtained mainly at Tin and Copper Mines, and exclusive of that obtained from the Arsenical Pyrites of Tables 117 and 118).

TABLE 120.

SUMMARY of OUTPUT.

County.	Quantity.	Value at the Mines.
	Tons.	£
Cornwall	1,361	13,295
Devon	2,468	40,941
Total for 1899	**3,829**	**54,236**
Total for preceding Year	4,174	53,787

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TABLE 121.

DETAILS of OUTPUT.

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
CORNWALL:		Tons.	£
Carn Brea and Tincroft, Illogan ...	Carn Brea and Tincroft Mining Co. ...	278	3,001
East Pool and Agar, Carn Brea	East Pool and Agar United Mining Co.	584	6,368
Levant, St. Just	Levant Mining Co.	200	912
North Crofty	Roskear Calcining Co.	15	174
Estimated produce of sundry small lots of mixed ores		284	2,840
Total		1,361	13,295
DEVONSHIRE:			
Bertha Consols, Buckland, Tavistock ...	Bertha Consols, Ltd.	20	340
Devon Great Consols, Tavistock... ...	Devon Great Consols Co., Ltd. ...	1,309	21,669
Gawton, Tavistock...	Gawton Mining Co., Ltd.	1,139	18,932
Total		2,468	40,941

TABLE 122.

OUTPUT and VALUE of ARSENIC (Crude and Refined) obtained at MINES and OPENWORKS in the United Kingdom, from 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	5,449	22,854	1882	7,469	49,148	1891	6,048	58,593
1874	6,268	27,438	1883	7,622	53,513	1892	5,114	43,686
1875	5,061	31,174	1884	7,905	57,841	1893	5,976	57,694
1876	4,228	28,092	1885	8,129	56,857	1894	4,801	48,614
1877	4,809	30,421	1886	5,227	32,802	1895	4,798	52,198
1878	4,991	26,900	1887	4,618	32,458	1896	3,616	45,483
1879	5,492	34,180	1888	4,624	35,197	1897	4,165	74,795
1880	5,738	43,456	1889	4,758	38,260	1898	4,174	53,787
1881	6,156	45,070	1890	7,276	60,727	**1899**	**3,829**	**54,236**

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List of Arsenic Refiners in the United Kingdom.

Owner of Works.	Situation of Works.	Postal Address.
CORNWALL:		
Combe & Danescombe Arsenic Co., Ltd.	Harrowbarrow, Callington, R.S.O.	6, Queen Street Place, London, E.C.
Cornish Mundic Syndicate, Ltd., Callington.	Gunnislake, Tavistock	London Office, 15, St. Helen's Place, London, E.C.
Cornwall Arsenic Co., T. W. Field, managing partner, Marazion.	Bissoe Bridge	Perranwell Station, R.S.O.
English Arsenic Co. (J. Thomas, manager)	Gwithian	Roseworthy, Camborne.
Trythall, W. J.	Carnon	Carnon Chemical Works, Perranwell Station, R.S.O.
Trythall, W. J.	Trevince...	Carnon Chemical Works, Perranwell Station, R.S.O.
Westlake, Thos., & Co.	Rumleigh	Calstock.
DEVONSHIRE:		
Devon Arsenic Manufacturing Co., Ltd.	Mary Tavy, near Tavistock ...	Glasgow Office, 143, West Regent Street; James R. Mackay, C.A., Secretary.
Devon Gawton Co., Ltd.	Tavistock	Tavistock.
Devon Gt. Consols Co., Ltd.	Tavistock	Tavistock.
GLAMORGANSHIRE:		
W. Bevan & Co.	Port Tennant, Swansea ...	Swansea.

Barytes (mainly Sulphate of Barium).

There are three principal Barytes districts: Northumberland, Shropshire, and Ireland. Northumberland supplies the valuable mineral witherite, or carbonate of barium; the produce of Shropshire and Ireland is mainly heavy-spar, or sulphate of barium. It occurs chiefly in veins in Silurian Rocks, and in the Carboniferous Limestone.

Table 123.

Summary of Output.

County.	Quantity.			Value.
	From Mines.	From Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Cumberland	32	—	32	64
Derby	230	—	230	115
Devon	—	1,000	1,000	500
Durham	2,100	—	2,100	1,397
Northumberland	7,309	—	7,309	14,618
Salop	5,680	—	5,680	4,567
Somerset	—	—	—	—
Westmoreland	658	—	658	658
York, North Riding	2,358	—	2,358	1,050
TOTAL FOR ENGLAND	18,367	1,000	19,367	22,969

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SUMMARY OF OUTPUT—*continued.*

County.	Quantity.			Value.
	From Mines.	From Quarries.	Total.	
WALES:	Tons.	Tons.	Tons.	£
Montgomery	1,092	—	1,092	546
SCOTLAND:				
Renfrew	927	—	927	162
IRELAND:				
Cork...	3,278	—	3,278	1,967
Total for 1899	**23,664**	**1,000**	**24,664**	**25,644**
Total for preceding Year...	21,175	1,050	22,225	23,253

TABLE 124.

DETAILS of OUTPUT from MINES.

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
ENGLAND.		Tons.	£
CUMBERLAND:			
Nentsbury, Alston	Nentsbury Mining Co., Ltd.	32	64
DERBYSHIRE:			
Bradwell, Wirksworth	W. Spencer	230	115
Cackle Mackle, Longstone Moor ...	William Furniss, Jun.		
George, Wirksworth	H. Abel		
Golconda, Griff	Wass and Son		
Maiden Rake, Little Hucklow ...	George Wilson		
Slack Scrin, Great Longstone... ...	A. and J. Sellers		
Wrangling Rake, Castleton	W. Eyre		
Total		230	115
DURHAM:			
Cow Green, Harwood Fell	Hedworth Barium Co., Ltd.	2,000	1,330
Flushamere, Middleton	William Lee and Son	100	67
Total		2,100	1,397
NORTHUMBERLAND:			
Fallowfield, Hexham (*Carbonate*)	Walton and Cowper...	2,753	14,618
Settlingstones, Fourstones (*Carbonate*)	Exors. of F. W. Hall	4,556	
Total		7,309	14,618

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BARYTES.—DETAILS of OUTPUT from MINES—*continued.*

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
SHROPSHIRE:		Tons.	£
Bog Minsterley	Oldfield, Lewis, and Smitham	41	32
Gatten, Pontesbury	M. Hutton-Harrop	90	45
Pennerley, Minsterley	A. Waters	40	15
Perkins Beach, Minsterley	Toye and Marsh	310	155
Rhadley, Stiperstones	M. Hulton-Harrop	100	50
Snailbeach, Minsterley...	Snailbeach Lead Mining Co., Ltd.... ...	1,226	397
Wotherton, Chirbury	Wotherton Barytes and Lead Mine Co., Ltd.	3,873	3,873
Total		5,680	4,567
WESTMORELAND:			
Scordale, Scordale, Appleby	Scordale Mining Co....	658	658
YORKSHIRE—NORTH RIDING:			
Lunehead, Mickleton	Lunehead Lead and Barytes Co.	2,358	1,050
WALES.			
MONTGOMERYSHIRE:			
Weston, Chirbury	Cliff Dale Barytes Co.	1,092	546
SCOTLAND.			
RENFREW:			
Muirshiel, Lochwinnoch	Muirshiel Mineral Co., Lochwinnoch ...	927	162
IRELAND.			
MUNSTER (Co. Cork):			
Dereenalamane, Schull...	Mount Gabriel Barytes Umber Co. (Arthur Cave).	3,278	1,967
Duneen Bay, Clonakilty	J. Cameron, Swan & Co.		
Mount Gabriel, Schull...	Mount Gabriel Barytes Umber Co. (Arthur Cave).		

TABLE 125.

Table showing the Annual Production and Value of BARYTES in the United Kingdom, from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	10,270	7,993	1882	23,308	27,870	1891	26,876	32,120
1874	14,374	12,301	1883	21,396	26,565	1892	24,247	29,283
1875	15,549	14,089	1884	20,062	29,356	1893	22,343	25,363
1876	23,562	24,479	1885	26,153	30,296	1894	20,656	21,410
1877	21,056	28,948	1886	25,142	25,818	1895	21,170	23,059
1878	22,436	36,686	1887	24,813	26,619	1896	23,737	25,590
1879	19,350	21,068	1888	25,191	26,147	1897	22,723	24,117
1880	18,477	13,384	1889	24,849	28,238	1898	22,225	23,253
1881	21,314	23,894	1890	25,353	29,684	**1899**	**24,634**	**25,644**

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Bauxite. *See* ALUM CLAY.

Bluestone. *See* ZINC ORE.

Bog Ore.

The Bog Ore raised in Ireland is an ore of iron which is principally used for purifying gas. It is obtained from shallow open workings.

TABLE 126.

OUTPUT.

Ports at which shipped.	—	Quantity.	Value at the Open works.
IRELAND :		Tons.	£
Dublin with Wicklow	Quantities furnished by the Collectors of H.M.'s Customs.	505	1,080
Londonderry District (including Coleraine)		2,347	
Sligo with Donegal		1,469	
Westport with Ballina, Co. Mayo		—	
Total for 1899		**4,321**	**1,080**
Total for preceding Year		5,418	1,354

TABLE 127.

OUTPUT and VALUE of BOG ORE in IRELAND from the Year 1882 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1880	No returns	—	1887	9,273	4,636	1894	7,803	1,951
1881	„	—	1888	10,927	5,463	1895	5,652	1,413
1882	5,872	1,957	1889	14,002	7,001	1896	6,652	1,663
1883	8,447	4,768	1890	14,512	7,256	1897	7,124	1,781
1884	6,453	1,935	1891	16,075	8,037	1898	5,418	1,354
1885	8,066	2,420	1892	15,363	7,681	**1899**	**4,321**	**1,080**
1886	6,780	2,712	1893	10,747	2,686			

Celestine. *See* STRONTIUM SULPHATE.

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Chalk.

A little chalk is raised from mines, but the total quantity is insignificant compared with the output of the open quarries. Kent is by far the most important chalk-yielding county, and many of the quarries produce more than 100,000 tons annually. Much of the chalk in Kent and Essex is employed in the manufacture of Portland cement at works on the banks of the Thames and the Medway.

TABLE 128.

COUNTY OUTPUT from MINES and QUARRIES.

County.	Quantity.			Value.
	From Mines.	From Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Bedford	—	61,745	61,745	2,450
Berks	411	5,427	5,838	307
Buckingham	—	360	360	15
Cambridge	—	46,023	46,023	4,137
Devon	—	20	20	3
Dorset	—	1,420	1,420	71
Essex	—	371,176	371,176	20,414
Hants	—	224,742	224,742	11,699
Hertford	999	45,889	46,888	2,386
Kent	3,095	3,217,886	3,220,981	131,072
Lincoln	—	37,821	37,821	2,441
Middlesex	—	80,030	80,030	2,023
Norfolk	—	23,986	23,986	2,505
Oxford	—	1,457	1,457	146
Somerset	—	980	980	37
Suffolk	53	12,132	12,185	791
Surrey	—	266,674	266,674	16,362
Sussex	—	218,468	218,468	9,279
Wilts	—	7,089	7,089	295
York	—	50,249	50,249	3,196
Total for 1899	**4,558**	**4,673,574**	**4,678,132**	**209,629**
Total for preceding Year ...	1,878	4,296,136	4,298,014	180.651

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Chert and Flint.

CHERT is obtained principally from strata of Carboniferous age in Derbyshire and Flintshire; both these counties supply the Potteries with stones used for grinding up the materials from which china is made.

FLINT is mainly obtained from open chalk pits; at Brandon, in Suffolk, there are still a few shallow mines, worked in a most primitive fashion, which, with some small workings in France, suffice to supply the gradually decreasing demand for the gun-flints exported to savage countries.

The figures below do not include flint gravel, which is classified under the head of "Gravel and Sand."

TABLE 129.

COUNTY OUTPUT from MINES and QUARRIES.

County.	Quantity.			Total Value.
	From Mines.	From Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Berks	11	110	121	17
Cornwall	—	432	432	43
Derby	1,958	1,575	3,533	3,199
Devon	—	2,009	2,009	133
Essex	—	10,341	10,341	820
Gloucester	—	1,000	1,000	125
Hants	—	15	15	2
Hertford	100	50	150	23
Kent	125	21,783	21,908	2,634
Middlesex	—	690	690	46
Norfolk	—	6,470	6,470	652
Oxford	—	360	360	34
Suffolk (*Gun Flints,*)	335	1,647	1,982	451
Surrey	—	4,474	4,474	1,218
Sussex	—	10,923	10,923	1,497
York	—	630	630	469
TOTAL FOR ENGLAND	2,529	62,509	65,038	11,363
WALES:				
Carmarthen	—	499	499	150
Flint	—	1,392	1,392	1,585
Glamorgan	—	753	753	80
TOTAL FOR WALES	—	2,644	2,644	1,815
IRELAND:				
Antrim	—	1,152	1,152	38
Total for United Kingdom for 1899.	**2,529**	**66,305**	**68,834**	**13,216**
Total for preceding Year	2,312	79,744	82,057	14,513

Clay.

Many of the workings for clay and brickearth are less than 20 feet deep, and so escape the operation of the Quarries Act, under which returns are compulsory. It must, therefore, be understood that the figures in the tables do not include the output of the shallow workings.

There are few counties in England which do not produce minerals employed in the manufacture of bricks, and the strata from which they are dug belong to very various geological ages. Beginning with the Coal Measures, we have mines and quarries producing fire-clay on a very extensive scale. Permian strata are likewise largely worked, as well as various beds in the Triassic, Jurassic, and Cretaceous Rocks. The Tertiary beds of the South of England afford much clay for making bricks, tiles, and pottery. The China clay of Cornwall and Devon is derived from granite decomposed *in situ*.

Bedfordshire and Surrey yield fuller's earth, which there occurs in the Lower Greensand. A like mineral is obtained in Somersetshire from beds of Jurassic age.

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TABLE 130.
COUNTY OUTPUT from MINES and QUARRIES.

County.	Mines (Mainly Fire-clay).		Quarries (Mainly Brick-clay).		Total Quantity.	Total Value.
	Quantity.	Value.	Quantity.	Value.		
ENGLAND:	Tons.	£	Tons.	£	Tons.	£
Bedford { Fuller's Earth	1,469	734	—	—	1,469	734
Bedford { Other Clay	—	—	165,360	6,015	165,360	6,015
Berks	—	—	110,953	4,521	110,953	4,521
Buckingham	—	—	8,680	290	8,680	290
Cambridge	—	—	244,380	10,237	244,380	10,237
Chester	17,018	4,254	3,949	99	20,967	4,353
Cornwall { China Clay	—	—	451,537	269,217	451,537	269,217
Cornwall { China Stone	—	—	54,691	21,403	54,691	21,403
Cornwall { Other Clay	—	—	58,366	3,834	58,366	3,834
Cumberland	43,397	6,520	32,030	800	75,427	7,320
Derby	71,244	21,373	447,964	22,275	519,208	43,648
Devon { China Clay	—	—	52,198	30,187	52,198	30,187
Devon { ,, Stone	—	—	3,046	2,665	3,046	2,665
Devon { Potter's Clay	39,550	18,631	34,555	12,218	74,105	30,849
Devon { Other Clay	120	54	161,522	18,489	161,642	18,543
Dorset { Potter's Clay	22,126	7,594	42,905	11,817	65,031	19,411
Dorset { Other Clay	2,500	250	80,653	5,788	83,153	6,038
Durham	498,011	48,837	246,442	10,377	744,453	59,214
Essex	—	—	134,433	4,481	134,433	4,481
Gloucester	10,487	2,027	243,686	12,796	254,173	14,823
Hants	—	—	64,079	2,792	64,079	2,792
Hereford	—	—	8,270	600	8,270	600
Hertford	—	—	59,760	1,872	59,760	1,872
Huntingdon	—	—	891,834	26,532	891,834	26,532
Kent	15,652	562	281,211	15,041	296,863	15,603
Lancaster	186,503	23,885	1,169,989	46,576	1,356,492	70,461
Leicester	63,095	15,774	544,563	43,126	607,658	58,900
Lincoln	—	—	180,071	5,394	180,071	5,394
Middlesex	—	—	15,625	234	15,625	234
Monmouth	79,481	19,870	89,654	5,431	169,135	25,301
Norfolk	—	—	22,591	905	22,591	905
Northampton	—	—	323,708	19,623	323,708	19,623
Northumberland	185,266	27,790	117,280	4,458	302,546	32,248
Nottingham	3,867	967	395,356	14,206	399,223	15,173
Oxford	—	—	30,022	1,074	30,022	1,074
Rutland	—	—	2,700	68	2,700	68
Salop	83,045	24,913	48,703	3,733	131,748	28,646
Somerset { Fuller's Earth	5,555	5,555	227	272	5,782	5,827
Somerset { Other Clay	550	140	171,821	9,295	172,371	9,435
Stafford	249,008	67,880	1,541,472	128,366	1,790,480	196,246
Suffolk	—	—	71,396	5,386	71,396	5,386
Surrey { Fuller's Earth	—	—	14,707	10,240	14,707	10,240
Surrey { Other Clay	—	—	37,122	4,928	37,122	4,928
Sussex	—	—	54,994	2,643	54,994	2,643
Warwick	27,354	5,471	624,079	30,565	651,433	36,036
Westmoreland	—	—	50	1	50	1
Wilts	—	—	29,735	1,656	29,735	1,656
Worcester	113,019	31,075	605,940	27,185	718,959	58,260
York	397,187	79,437	955,808	39,602	1,352,995	119,039
Total	2,115,504	413,593	10,930,117	899,313	13,045,621	1,312,906
WALES:						
Cardigan	—	—	5,620	843	5,620	843
Carmarthen	5,693	853	6,343	329	12,036	1,182
Carnarvon	—	—	30,527	1,996	30,527	1,996
Denbigh	56,931	5,693	208,051	26,446	264,982	32,139
Flint	28,112	2,811	153,716	6,944	181,828	9,755
Glamorgan	108,089	16,690	109,058	6,674	217,147	23,364
Merioneth	—	—	256	64	256	64
Montgomery	—	—	4,613	192	4,613	192
Total	198,825	26,047	518,184	43,488	717,009	69,535
SCOTLAND:						
Ayr	113,127	18,622	11,201	1,418	124,328	20,040
Clackmannan	1,817	273	—	—	1,817	273
Dumbarton	29,585	4,685	800	400	30,385	5,085
Dumfries	—	—	10,231	686	10,231	686
Edinburgh	53,810	8,071	44,000	5,325	97,810	13,396
Fife	35,662	5,349	27,337	3,041	62,999	8,390
Forfar	—	—	4,340	108	4,340	108
Haddington	30,085	4,513	—	—	30,085	4,513
Kinross	3,500	525	—	—	3,500	525
Lanark	427,590	61,943	159,789	9,922	587,379	71,865
Linlithgow	31,290	4,693	28,312	708	59,602	5,401
Renfrew	76,999	10,625	817	20	77,816	10,645
Stirling	79,992	11,999	19,000	670	98,992	12,669
Total	883,457	131,298	305,827	22,298	1,189,284	153,596

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COUNTY OUTPUT from MINES and QUARRIES—*continued.*

County.	Mines. (Mainly Fire-clay).		Quarries (Mainly Brick-clay).		Total Quantity.	Total Value.
	Quantity.	Value.	Quantity.	Value.		
IRELAND:	Tons.	£	Tons.	£	Tons.	£
Antrim	—	—	72,000	4,495	72,000	4,495
Cork	—	—	13,000	350	13,000	350
Dublin	—	—	7,962	433	7,962	433
Tyrone	5,637	845	—	—	5,637	845
Waterford	—	—	6,120	275	6,120	275
Queen's County	224	22	1,000	25	1,224	47
Total	5,861	867	100,082	5,578	105,943	6,445
Isle of Man	—	—	7,000	175	7,000	175
Total for the United Kingdom for 1899.	**3,203,647**	**571,805**	**11,861,210**	**970,852**	**15,064,857**	**1,542,657**
Total for preceding Year ...	2,989,353	571,319	1,749,121	1,045,039	14,738,474	1,616,358

TABLE 131.

Output and Value of CLAY in the United Kingdom—including CHINA CLAY, POTTER'S CLAY, FULLER'S EARTH, &c., from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	1,785,000	656,300	1882	2,856,276	771,571	1891	3,222,035	943,896
1874	2,436,912	780,159	1883	2,853,353	706,757	1892	3,103,852	889,375
1875	3,008,444	753,957	1884	2,695,710	667,396	1893	3,065,208	817,419
1876	3,971,123	744,224	1885	2,531,198	600,934	1894	3,263,768	823,701
1877	2,961,155	592,231	1886	2,390,440	583,210	1895	*9,796,086	1,839,607
1878	2,711,486	677,871	1887	2,413,693	590,412	1896	11,341,782	1,442,069
1879	2,878,489	717,143	1888	2,562,792	653,419	1897	12,705,196	1,453,128
1880	3,062,544	1,635,650	1889	3,036,253	828,174	1898	14,738,474	1,616,358
1881	2,401,421	1,200,210	1890	3,308,214	899,166	**1899**	**15,064,857**	**1,542,657**

* Including a large quantity of ordinary Brick-clay returned under the Quarries Act, which was not included in the returns of previous years.

TABLE 132.

CHINA CLAY and CHINA STONE conveyed by Rail and Sea in 1899 and the preceding Year.

China Clay and China Stone conveyed by Rail and Sea.	1898.	1899.
ENGLAND.		
CORNWALL:	Tons.	Tons.
Shipment of China Clay and China Stone, from Returns furnished by the following Railway Companies and Harbour-masters:—		
Charlestown ... ... Harbour-master	53,753	49,945
Falmouth ... ... Cornwall Railway, G.W.R.	8,143	10,040
Fowey ... ... Cornwall Minerals Railway, G.W.R.	307,921	337,837
Newquay ... ... Ditto ditto	3,714	5,712
Par Harbour ... ... Cornwall Railway, G.W.R.	82,183	78,960
Ditto ... ... Cornwall Minerals Railway, G.W.R.		
Penryn ... ... Harbour-master	1,181	1,069
Pentewan ... ... Ditto	23,073	15,267
Penzance ... ... Ditto	3,644	2,518
Plymouth ... ... Cornwall and Cornwall Minerals Railways, G.W.R.	731	1,381
Ditto Sutton Harbour ... Ditto ditto	—	—
Porthleven ... ... Harbour-master	1,221	2,921
St. Agnes (*Fire-clay*) ... ... Ditto	—	—
Wadebridge, Padstow Harbour Ditto	1,435	1,906
Sent to inland towns from the Cornwall and Cornwall Minerals Railways, G.W.R.	6,325	6,796
Total	493,324	**514,412**

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TABLE 133.

POTTER'S CLAY sent from POOLE by Sea and Rail in 1899 and the preceding Year. (Return furnished by Messrs. Pike Bros.)

By Sea and Railway.	1898.	1899.
	Tons.	Tons.
British and Foreign Ports	72,724	67,467
By Railway	3,269	7,777
Total	75,993	**75,244**

TABLE 134.

POTTER'S CLAY Exported to FOREIGN COUNTRIES from the PORT of TEIGNMOUTH in 1899 and the preceding Year. (Return by Board of Customs.)

Countries to which Exported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
Belgium	6,461	5,758	6,571	5,725
France	1,240	1,040	449	465
Germany...	567	382	735	637
Holland	5,332	4,218	3,909	2,830
Italy	1,490	1,269	973	814
Norway	950	781	1,038	619
Portugal...	60	48	—	—
Russia	340	374	544	435
Spain	1,211	1,097	2,285	1,992
Sweden	234	164	—	—
Total to Foreign Ports	17,885	15,131	**16,504**	**13,517**

TABLE 135.

POTTER'S CLAY Exported from the PORT of POOLE in 1899 and the preceding Year. (Return by Board of Customs.)

Countries to which Exported.	1898.		1899.	
	Quantity.	Declared Value.	Quantity.	Declared Value.
	Tons.	£	Tons.	£
Austrian Territories	250	200	295	236
Belgium	1,701	1,361	1,694	1,348
Denmark	674	539	333	266
France	909	729	982	786
Germany	2,090	1,343	2,695	1,839
Holland	2,604	2,078	2,981	2,385
Russia	558	408	798	638
Sweden	4,117	2,755	3,496	2,331
Total to Foreign Ports	12,903	9,413	**13,274**	**9,829**

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TABLE 136.

TOTAL EXPORTS of CLAYS from the UNITED KINGDOM in 1899 and the preceding Year.
(Return by Board of Customs.)

Countries to which Exported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
Russia	32,105	31,259	33,533	31,727
Sweden and Norway	17,469	15,018	18,701	17,061
Germany...	42,146	40,591	50,357	48,898
Holland	46,891	41,574	48,767	43,660
Belgium	53,653	52,510	61,364	62,150
France	43,513	42,833	33,280	33,204
Spain	9,094	8,101	14,063	11,305
Italy	11,174	11,245	12,682	13,104
United States : Atlantic	92,325	123,545	106,193	150,314
Other Countries	29,192	39,373	30,325	39,889
Total to Foreign Ports	377,562	406,049	**409,265**	**451,312**

Coal.

With the exception of a small quantity from the Oolite in Scotland, all the coal was obtained from rocks belonging to the Carboniferous epoch, and mainly from the true Coal Measures. In the North of England and in Scotland some of the coal seams are geologically older, as they occur in strata of the same age as the Millstone Grit and Carboniferous Limestone. Further, some of the coal in Scotland is of still earlier date, being found in the Calciferous Sandstone at the base of the Carboniferous rocks; owing to the rise in prices this year (1900), this coal is now being reworked.

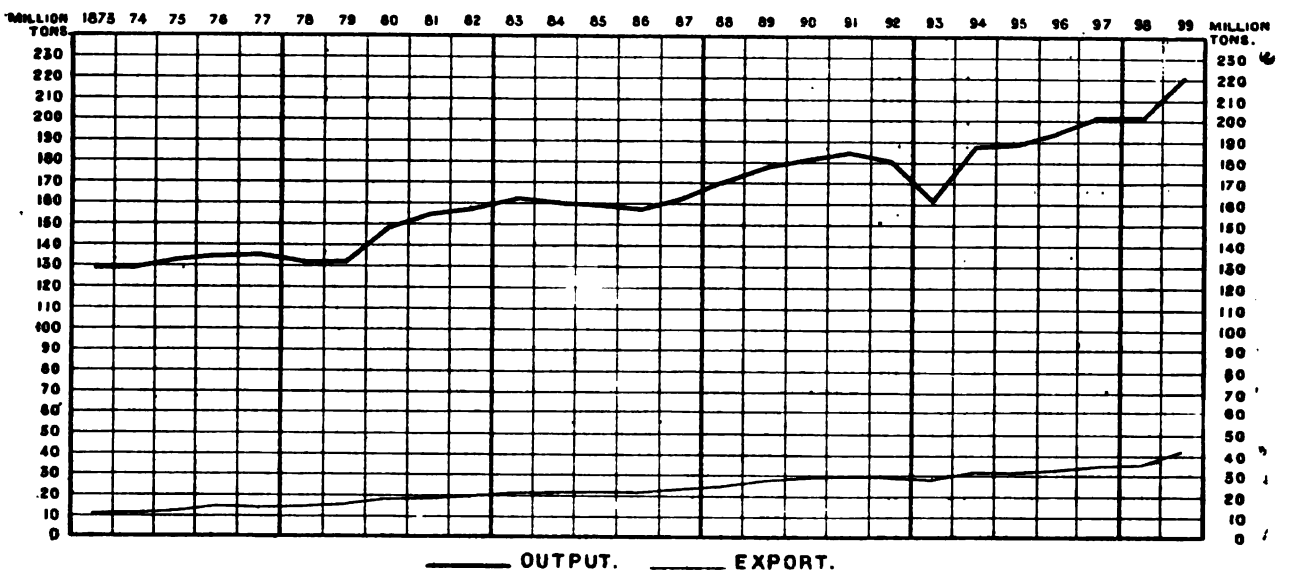
The thickness of the seams worked varies from 11 or 12 inches to 30 feet, but the "ten yard coal" of Staffordshire must be regarded as quite exceptional. In Scotland seams of cannel coal only six inches in thickness have been worked.

The term "coal," as used in the Statistics, includes anthracite; the total output of this variety of coal was nearly 2½ million tons (Table 139).

As already shown in Part I., the total output of coal from mines was 220,085,368 tons, and from open quarries 9,413 tons, making a gross total of 220,094,781 tons, which compared with the production of 1898 shows an increase of 18,040,265 tons.

The following diagram shows the Annual Output and Export* of Coal since 1873, the thick line representing the output and the thin line the export.

FIG. 11.



Tables Nos. 137 and 138 give a summary of the total output for each country of the United Kingdom, and the output for each county with the approximate price per ton, and the total value at the mines respectively.

* Exclusive of coke, patent fuel and coal shipped for use of steamers engaged in foreign trade.
See page 171.

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TABLE 137.

SUMMARY of the OUTPUT of COAL from MINES and QUARRIES, arranged according to COUNTRIES.

COUNTRY.	Quantity.				Total Value.
	From Mines.	From Quarries.	Total.	Comparison with preceding Year.	
	Tons.	Tons.	Tons.	Tons.	£
ENGLAND	155,855,572	9,312	155,864,884	+ 8,041,454	58,949,808
WALES	32,961,764	—	32,961,764	+ 9,098,259	12,803,428
SCOTLAND	31,142,612	101	31,142,713	+ 905,097	11,676,441
IRELAND	125,420	—	125,420	— 4,545	51,460
Total for 1899 ...	**220,085,368**	**9,413**	**220,094,781**	**+ 18,040,265**	**83,481,137**
Total for preceding Year	202,042,243	12,273	202,054,516	— 75,415	64,169,382

TABLE 138.

OUTPUT and VALUE of COAL (including Anthracite), arranged according to COUNTIES.

COUNTY.	Quantity.	Total Quantity.	Comparison with preceding Year.	Approximate Price per Ton at the Mines.	Value at the Mines and Quarries.
ENGLAND:					
From *Mines*.	Tons.	Tons.	Tons.	s. d.	£
Chester	—	721,431	+ 14,925	7 6	270,537
Cumberland	—	2,100,418	+ 38,540	6 9·24	710,991
Derby...	—	14,594,424	+ 1,020,670	6 11	5,047,238
Durham, North	10,468,671	34,870,675	+ 96,527	6 11·04	3,622,160
Do. South	24,402,004		+ 36,801	6 11·04	8,443,093
Gloucester (Bristol District).	422,288	1,528,014	+ 11,211	10 4	218,182
Gloucester (Forest of Dean).	1,105,726		— 70,986	10 4	571,202
Lancaster, North and East	11,033,823	24,387,475	+ 136,770	7 6·70	4,169,797
Do. West	13,353,652		— 73,905	7 6	5,007,619
Leicester	—	1,888,819	+ 153,076	7 5	700,437
Monmouth	—	10,103.067	+ 4,043,558	12 0	6,061,840
Northumberland	—	11,184,072	+ 613,359	7 0·69	3,946,579
Nottingham	—	8,224,441	+ 454,394	7 4	3,015,628
Salop	—	766,219	+ 14,568	7 6	287,332
Somerset	—	983,973	— 6,814	11 0	541,185
Stafford, North	5,311,587	13,881,220	+ 117,199	7 0	1,859,055
Do. South	8,569,633		+ 43,608	6 10	2,927,958
Warwick	—	2,873,098	+ 184,815	6 9	969,671
Westmoreland	—	810	— 200	6 6	263
Worcester	—	842,951	— 52,120	6 3	263,422
York, North Riding ...	2,970	26,904,465	— 2,639	6 6	965
Do. West Riding ...	26,901,495		+ 1,270,737	7 8	10,312,240
TOTAL FROM MINES ...	—	155,855,572	+ 8,044,094	7 6·77	58,947,484
From *Quarries*.					
Derby...	—	608	+ 378	—	143
Lancaster	—	50	— 25	—	12
Leicester	—	—	— 2,020	—	—
Stafford	—	5,812	— 1,161	—	1,692
Worcester	—	175	+ 175	—	9
Yorkshire, West Riding ...	—	2,667	+ 13	—	468
TOTAL FROM QUARRIES ...	—	9,312	— 2,640	—	2,324
TOTAL FROM MINES AND QUARRIES FOR ENGLAND.	—	155,864,884	+ 8,041,454	7 6·77	58,949,808

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OUTPUT and VALUE of COAL, &c.—*continued.*

COUNTY.	Quantity.	Total Quantity.	Comparison with preceding Year.	Approximate Price per Ton at the Mines.	Value at the Mines and Quarries.
WALES:	Tons.	Tons.	Tons.	*s.* *d.*	£
Brecon, East...	25,481	383,465	+ 6,911	11 6	14,652
Do. West	357,984*		+ 59,469	7 2	128,278
Carmarthen	768,402*	1,207,205	+ 78,175	7 2	275,344
	438,803		+ 5,132	6 8	146,268
Denbigh	—	2,512,104	+ 38,208	7 9	973,440
Flint	—	682,630	— 42,870	7 9	264,519
Glamorgan, East	1,112,782	28,116,941	+ 327,779	11 6	639,850
Do. West	927,915*		+ 193,551	7 2	332,503
	26,076,244		+ 8,454,869	7 8	9,995,894
Pembroke	—	59,419°	— 22,965	11 0	32,680
TOTAL FOR WALES ...	—	32,961,764	+ 9,098,259	7 9·22	12,803,428
SCOTLAND:					
From *Mines.*					
Argyll and Dumfries ...	—	154,786	— 2,000	7 7	58,690
Ayr	—	3,809,313	+ 55,619	7 5	1,412,620
Clackmannan	—	366,697	+ 21,065	7 6	137,511
Dumbarton	—	511,199	— 10,064	8 2	208,740
Dumfries (included with Argyll).	—	—	—	—	—
Edinburgh	—	1,267,521	+ 22,774	7 6	475,320
Fife	—	4,927,489	+ 479,920	7 6	1,847,808
Haddington	—	450,588	+ 39,848	7 6	168,971
Kinross	—	1,600	+ 335	7 6	600
Lanark, East...	8,516,159	16,416,754	+ 145,855	7 6	3,193,560
Do. West	7,900,595		+ 128,319	7 5	2,929,804
Linlithgow	—	948,748	+ 38,417	7 6	355,780
Peebles	—	293	— 554	7 6	110
Perth	—	560	— 1,080	7 6	210
Renfrew	—	12,491	— 23,701	7 1	4,424
Stirling, East	1,265,268	2,269,992	— 18,274	7 6	474,475
Do. West	1,004,724		+ 28,208	8 1	406,076
Sutherland	—	4,581	+ 530	7 6	1,718
TOTAL FROM MINES ...	—	31,142,612	+ 905,317	7 5·98	11,676,417
From *Quarries.*					
Lanark, West	—	80	+ 80	5 0	20
Renfrew	—	21	— 82	3 9·7	4
Stirling	—	—	— 218	—	—
Total from Quarries ...	—	101	— 220	4 9·03	24
TOTAL FROM MINES AND QUARRIES FOR SCOTLAND.	—	31,142,713	+ 905,097	7 5·98	11,676,441
IRELAND:					
Connaught—					
Leitrim	—	2,160	+ 251	7 1	3,176
Roscommon	—	6,808			
Leinster—					
Kilkenny	—	60,256°	— 5,219	8 5	33,080
Queen's	—	18,222°			
Munster—					
Tipperary	—	12,864*	— 3,445	8 0·6	5,177
Ulster—					
Antrim	—	6,111	+ 3,868	7 11·83	10,027
Tyrone	—	18,999			
TOTAL FOR IRELAND ...	—	125,420	— 4,545	8 2·47	51,460
Total output and value from Mines and Quarries in the United Kingdom for 1899.	—	**220,094,781**	**+18,040,265**	**7 7·03**	**83,481,137**
TOTAL FOR PRECEDING YEAR ...	—	202,054,516	— 75,415	6 4·22	64,169,382

* Anthracite.

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TABLE 139.

SUMMARY of the OUTPUT of ANTHRACITE.

(These figures are included in the preceding tables of the Output of Coal.)

COUNTY.	Quantity.	Value.
WALES:	Tons.	£
Brecon	357,984	128,278
Carmarthen	768,402	275,344
Glamorgan	927,915	332,503
Pembroke	59,419	32,680
Total for Wales	2,113,720	768,805
SCOTLAND:		
East District, West District (*Estimated*)	213,445	87,157
IRELAND:		
Leinster	78,478	33,080
Munster	12,864	5,177
Total for Ireland	91,342	38,257
Total output of Anthracite	**2,418,507**	**871,094**

The following tables show the output of coalfields separately. The quantity of coal raised per person employed below ground was 392 tons on an average in 1899, against 371 in the preceding year:—

TABLE 140.

QUANTITY of MINERALS produced from COAL MINES, classified according to COALFIELDS.

Coalfield.	Coal.	Comparison with preceding Year.	Percentage of the Total Output.	Ironstone.	Fireclay.	Other Minerals.	Gross Total
1. Scotch coalfields	31,142,612	+ 905,317	14·1	515,418	493,591	105,673	32,257,294
2. Northern coalfield	46,054,747	+ 746,687	20·9	—	665,933	17,344	46,738,024
3. Yorkshire, &c., coalfield ...	49,720,360	+ 2,745,801	22·6	62,662	442,868	88,328	50,314,218
4. Lancashire and Cheshire coalfield.	25,108,906	+ 77,790	11·4	—	162,305	34,355	25,305,566
5. Midland coalfields	20,252,307	+ 461,146	9·2	1,013,732	382,529	6,809	21,655,377
6. Small detached coalfields ...	4,616,185	— 30,888	2·1	—	46,495	3,492	4,666,172
7. North Wales coalfield ...	3,194,734	— 4,662	1·5	100	85,043	2,375	3,282,252
8. South Wales coalfield ...	39,870,097	+13,146,479	18·1	19,990	191,813	4,488	40,086,388
9. Irish coalfields	125,420	— 4,545	·1	—	5,861	—	131,281
Total	220,085,368	+18,043,125	100·0	1,611,902	2,476,438	262,864	224,436,572

The enormous increase in the output of coal from the South Wales Coalfield, viz.:— 13,146,479 tons, or 49 per cent., compared with the previous year, requires a word of

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comment. The difference is accounted for by the diminished output in 1898, the year of the great strike. If the year 1899 is compared with 1897 the increase is only 4,063,707 tons.

TABLE 141.

OUTPUT of COAL, VALUE at the PIT'S MOUTH, AVERAGE PRICE per Ton, QUANTITY of IRONSTONE, FIRECLAY, &c., obtained from COAL MINES, NUMBER of PERSONS employed, and OUTPUT per PERSON in the several COALFIELDS in the Year 1899.

Name of Coalfield.	Coal.			(a) Ironstone, Fireclay, &c., produced from Coal Mines.	Number of Persons employed.		Quantity of Coal raised, including the Ironstone, Fireclay, &c., in column (a).	
	Quantity raised.	Total Value at Pit's Mouth.	Average Price per Ton.	Quantity raised.	Below Ground.	Above and Below Ground.	Per Person employed Below Ground.	Per Person employed Above and Below Ground.
	Tons.	£	s. d.	Tons.			Tons.	Tons.
1 Scotch coalfields ...	31,142,612	11,676,417	7 5·98	1,114,682	73,969	90,385	436	357
2. Northern coalfield ...	46,054,747	16,011,832	6 11·44	683,277	112,549	145,441	415	321
3. Yorkshire, &c., coalfield.	49,720,360	18,375,106	7 4·70	593,858	130,076	164,194	387	306
4. Lancashire and Cheshire coalfield.	25,108,906	9,447,953	7 6·31	196,660	66,984	83,420	378	303
5. Midland coalfields ...	20,252,307	7,007,875	6 11·05	1,403,070	49,629	65,800	436	329
6. Small detached coalfields.	4,616,185	2,042,878	8 10·21	49,987	16,081	20,282	290	230
7. North Wales coalfield	3,194,734	1,237,959	7 9	87,518	9,804	12,008	335	273
8. South Wales coalfield	39,870,097	17,627,309	8 10·11	216,291	111,981	132,682	358	302
9. Irish coalfields ...	125,420	51,460	8 2·47	5,861	733	993	179	132
Total or average ...	220,085,368	83,478,789	7 7·03	4,351,204	571,806	715,205	393	314

The coalfields referred to in the two preceding tables are the coalfields as defined in Part II., page 52. These tables and also Table 142 relate to *coal* mines, not to all mines which come within the provisions of the Coal Mines Regulation Acts (*see* Part II., page 51). The output of coal from open quarries (9,413 tons) is not included.

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TABLE 142.

OUTPUT of COAL, VALUE at PIT'S MOUTH, AVERAGE PRICE per Ton, QUANTITY of IRONSTONE, FIRECLAY, &c., obtained from COAL MINES, NUMBER of PERSONS EMPLOYED, and OUTPUT per PERSON in each COUNTY during the Year 1899.

County.	Coal.			(a) Ironstone, Fireclay, &c., produced from Coal Mines.	Number of Persons employed.		Quantity of Coal raised, including Ironstone, Fireclay, &c., in column (a).	
	Quantity raised.	Total Value at Pit's Mouth.	Average Price per Ton.	Quantity raised.	Below Ground.	Above and Below Ground.	Per Person employed Below Ground.	Per Person employed Above and Below Ground.
ENGLAND:	Tons.	£	s. d.	Tons.			Tons.	Tons.
Chester	721,431	270,537	7 6	10,385	1,989	2,540	368	288
Cumberland	2,100,418	710,991	6 9·24	46,889	5,894	7,897	364	272
Derby	14,594,424	5,047,238	6 11	47,753	35,145	43,983	417	333
Durham	34,870,675	12,065,253	6 11·04	498,011	82,260	108,060	430	327
Gloucester	1,528,014	789,474	10 4	2,548	5,746	6,989	266	219
Kent	—	—	—	—	90	168	—	—
Lancaster	24,387,475	9,177,416	7 6·62	186,275	64,995	80,880	378	304
Leicester	1,888,819	700,437	7 5	19,188	5,093	6,467	375	295
Monmouth	10,103,067	6,061,840	12 0	95,263	26,973	31,844	378	320
Northumberland	11,184,072	3,946,579	7 0·69	185,266	30,289	37,381	375	304
Nottingham	8,224,441	3,015,628	7 4	3,957	20,159	25,276	408	326
Salop	766,219	287,332	7 6	19,892	2,586	3,399	304	231
Somerset	983,973	541,185	11 0	550	4,325	5,194	228	190
Stafford	13,881,220	4,787,013	6 10·76	1,228,896	33,356	44,665	453	338
Warwick	2,873,098	969,671	6 9	19,228	6,827	8,880	424	326
Westmoreland	810	263	6 6	—	7	10	116	81
Worcester	842,951	263,422	6 3	115,866	1,767	2,389	543	401
York	26,904,465	10,313,205	7 8	542,148	74,791	94,959	367	289
Total or average ...	155,855,572	58,947,484	7 6·77	3,022,115	402,292	510,981	395	311
WALES:								
Brecon...	383,465	142,930	7 5·46	379	1,222	1,444	314	266
Carmarthen	1,207,205	421,612	6 11·82	5,693	3,880	4,884	313	248
Denbigh	2,512,104	973,440	7 9	57,031	7,805	9,516	329	270
Flint	682,630	264,519	7 9	30,487	1,999	2,492	357	286
Glamorgan	28,116,941	10,968,247	7 9·62	114,956	79,613	94,108	355	300
Pembroke	59,419	32,680	11 0	—	293	402	203	148
Total or average ...	32,961,764	12,803,428	7 9	208,546	94,812	112,846	350	294
SCOTLAND:								
Argyll (*see* Dumfries) ...	—	—	—	—	—	—	—	—
Ayr	3,809,313	1,412,620	7 5	291,581	10,185	12,048	403	340
Clackmannan	366,697	137,511	7 6	1,817	833	986	442	374
Dumbarton	511,199	208,740	8 2	44,689	1,499	2,015	371	276
Dumfries (including Argyll)	154,786	58,690	7 7	—	338	420	458	369
Edinburgh	1,267,521	475,320	7 6	96,391	3,614	4,577	377	298
Fife	4,927,489	1,847,808	7 6	60,931	11,149	13,785	447	362
Haddington	450,588	168,971	7 6	30,085	957	1,133	502	424
Kinross	1,600	600	7 6	3,500	12	28	425	182
Lanark	16,416,754	6,123,364	7 5·52	370,208	37,343	45,191	450	371
Linlithgow	948,748	355,780	7 6	76,588	2,273	2,836	451	362
Peebles	293	110	7 6	—	2	3	146	98
Perth	560	210	7 6	—	2	2	280	280
Renfrew	12,491	4,424	7 1	26,920	147	185	268	213
Stirling	2,269,992	880,551	7 9·1	111,906	5,597	7,154	426	333
Sutherland	4,581	1,718	7 6	66	18	22	258	211
Total or average ...	31,142,612	11,676,417	7 5·98	1,114,682	73,969	90,385	436	357
IRELAND:								
Antrim	6,111	—	—	—	25	38	244	161
Cork	—	—	—	—	—	6	—	—
Kilkenny	60,256	—	—	—	288	385	209	157
Leitrim	2,160	—	—	—	21	25	103	86
Queen's County	18,222	—	—	224	192	246	96	75
Roscommon	6,808	—	—	—	51	72	133	95
Tipperary	12,864	—	—	—	81	114	159	113
Tyrone...	18,999	—	—	5,637	75	107	328	230
Total or average ...	125,420	51,460	8 2·47	5,861	733	993	179	132
Total or average for United Kingdom.	220,085,368	83,478,789	7 7·03	4,351,204	571,806	715,205	393	314

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TABLE 143.

TABLE showing for each Year since 1873 the OUTPUT of COAL in the UNITED KINGDOM; the QUANTITY SHIPPED for FOREIGN COUNTRIES, in the form of COAL, COKE, and PATENT FUEL; the QUANTITY REMAINING for HOME CONSUMPTION; and its proportion to each HEAD of the POPULATION.

Year.	(1.) Total Output	Coal, Coke, and Patent Fuel shipped for Foreign Countries.							(9.) Quantity remaining for Home Consumption for all purposes.	(10.) Population of the United Kingdom.	(11.) Quantity of Coal remaining per Head of the Population.
		(2.) Coal Exported.	(3.) Coke Exported.	(4.) Coal equivalent of Coke Exported.*	(5.) Patent Fuel Exported.	(6.) Coal contained in Patent Fuel Exported.†	(7.) Coal shipped for use of Steamers‡ engaged in Foreign Trade.	(8.) Total Coal Exported. (Columns 2, 4, 6, and 7.)			
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.		Tons.
1873	128,680,131	12,077,507	261,649	436,082	278.410	250.569	3,312,470	16,076,628	112,603,503	32,177,550	3·499
1874	126,590,108	13,381,071	236,240	393,733	309,894	278,905	3,140,383	17,194,092	109,396,016	32,501,517	3·366
1875	133,306,485	13,978,956	307,629	512,715	258,331	232,497	3,278,249	18,002,417	115,304,068	32,838,758	3·511
1876	134,125,166	15,690,402	326,707	544,512	281,968	253,771	3,564,524	20,053,209	114,071,957	33,199,994	3·436
1877	134,179,968	14,880,899	333,640	556,067	205,511	184,960	3,661,552	19,283,478	114,896,490	33,575,941	3·422
1878	132,612,063	14,998,527	274,239	457,065	221,867	199,680	4,018,010	19,673,282	112,938,781	33,943,773	3·327
1879	133,720,393	15,740,082	345,438	575,730	356,776	321,098	4,401,120	21,038,030	112,682,363	34,302,557	3·285
1880	146,969,409	17,891,181	442,797	737,995	385,993	347,394	4,926,076	23,902,646	123,066,763	34,622,930	3·554
1881	154,184,300	18,759,991	414,762	691,270	412,310	371,079	5,227,588	25,049,928	129,134,372	34,934,476	3·696
1882	156,499,977	19,926,011	466,249	777,082	542,188	487,969	5,575,160	26,766,222	129,733,755	34,206,617	3·685
1883	163,737,327	21,670,926	488,001	813,335	616,707	555,036	6,400,594	29,439,891	134,297,436	35,449,721	3·788
1884	160,757,779	22,354,474	476,291	793,818	519,465	467,518	6,614,937	30,230,747	130,527,032	35,724,231	3·654
1885	159,351,418	22,710,335	548,375	913,958	512,247	461,022	6,681,359	30,766,674	128,584,744	36,015,601	3·570
1886	157,518,482	22,107,144	650,311	1,083,852	525,934	473,341	6,698,238	30,362,575	127,155,907	36,313,582	3·501
1887	162,119,812	23,258,855	661,931	1,103,218	540,181	486,163	6,868,790	31,717,026	130,402,786	36,599,143	3·563
1888	169,935,219	25,632,407	798,254	1,330,423	539,875	485,887	7,121,393	34,570,110	135,365,109	36,881,271	3·670
1889	176,916,724	27,504,911	769,480	1,282,467	682,054	613,849	7,736,794	37,138,021	139,778,703	37,178,929	3·760
1890	181,614,288	28,738,241	732,375	1,220,625	672,223	605,001	8,096,405	38,660,272	142,954,016	37,484,764	3·814
1891	185,479,126	29,496,785	859,543	1,432,572	727,781	655,009	8,536,495	40,120,861	145,358,265	37,797,013	3·846
1892	181,786,871	29,048,056	609,451	1,015,752	796,466	716,819	8,600,129	39,380,756	142,406,115	38,106,675	3·737
1893	164,325,795	27,708,128	602,774	1,004,623	721,053	648,947	8,126,372	37,488,070	126,837,725	38,431,586	3·300
1894	188,277,525	31,756,368	588,266	980,443	729,064	656,158	9,294,461	42,687,430	145,590,095	38,786,053	3·754
1895	189,661,362	31,714,906	700,064	1,166,773	686,482	617,834	9,407.789	42,907,302	146,754,060	39,136,218	3·750
1896	195,361,260	32,947,680	676,811	1,128,018	637,565	573.808	9,937,305	44,586,811	150,774,449	39,451,960	3·821
1897	202,129,931	35,354,296	978,327	1,630,545	764,295	687,865	10,455,758	48,128,464	154,001,467	39,826,806	3·867
1898	202,054,516	35,058,430	769,742	1,282,903	734,624	661,162	11,264,204	48,266,699	153,787,817	40,183,927	3·827
1899	**220,094,781**	**41,180,332**	**867,295**	**1,445,492**	**1,063,777**	**957,399**	**12,226,801**	**55,810,024**	**164,284,757**	**40,559,954**	**4·050**

* The figures under column (4) have been computed on the assumption that for every 60 tons of coke exported, 100 tons of coal were consumed in its manufacture.

† The patent fuel exported has been assumed to contain 90 % of coal; the remaining 10 % consisting mainly of pitch

‡ This includes passenger as well as cargo steamers.

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TABLE 144.

PRICES per Ton of SEA-BORNE COAL in the LONDON MARKET. (Taken from the Coal Exchange Lists.)

Month.	Newcastle. Quotations.			Sunderland. Quotations.			Hartlepool. Quotations.		
	Highest.	Lowest.	Mean.	Highest.	Lowest.	Mean.	Highest.	Lowest.	Mean.
1899.	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*	*s.* *d.*
January	*	*	*	17 6	16 6	17 0	*	*	*
February	*	*	*	17 6	16 6	17 0	*	*	*
March	*	*	*	17 6	16 6	17 0	17 0	17 0	17 0
April	*	*	*	17 6	16 6	17 0	17 0	17 0	17 0
May	*	*	*	17 6	16 6	17 0	17 0	17 0	17 0
June	*	*	*	17 6	16 6	17 0	17 0	17 0	17 0
July	*	*	*	17 6	16 6	17 0	17 0	17 0	17 0
August	*	*	*	17 6	16 6	17 0	17 0	17 0	17 0
September	*	*	*	17 6	16 6	17 0	17 0	17 0	17 0
October	*	*	*	21 0	16 6	18 10	20 6	17 6	18 8
November	20 6	19 0	19 10	21 0	20 0	20 6	20 6	20 6	20 6
December...	22 6	19 6	20 8	23 0	20 0	21 3	22 6	20 6	21 2
Mean prices for 1899	—	—	20 6	—	—	17 9	—	—	18 10
Mean prices for preceding year	—	—	16 0	—	—	16 2	—	—	—

* No quotations.

NOTE.—The above are the prices of sea-borne coals put into barge from ship in the River Thames. The difference between these prices and those charged to the consumer represents the cost of distribution and merchant's profits.

PRICES of COAL at the MINES, in the LONDON MARKET and at the different SHIPPING PORTS EACH YEAR since 1873.

In compiling the table upon page 173, several sources of information have been utilized :—

1. *The average prices at the Mines.*—Since 1881 the average prices at the pit's mouth have been ascertained or estimated for each county by the Inspectors of Mines, for the purpose of obtaining the total value of coal raised.
2. *The average price in the London Coal Market* has been obtained from the published returns issued by the Coal Exchange each market day, which give the average price of the best sea-borne coals put into barge in the River Thames, including the 1*s.* 1*d.* per ton dues paid to the Corporation of London up to the year 1890; since that date the coal dues have ceased to be collected.
3. *The prices per ton at the various Shipping Ports* have been deduced from the Annual Parliamentary Returns prepared by the Board of Customs, giving the quantities exported, and the declared value thereof.

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TABLE 145.

The Average Price of Coal per Ton at the Pit's Mouth, and in the London Market; also its Value at the principal Shipping Ports in the United Kingdom, for each Year from 1873 to 1899.

Year.	Average Price at Pit's Mouth.			Average Price in London Market.	English Ports.								Welsh Ports.			Scotch Ports.				
	England.	Wales.	Scotland.		Liverpool.	Newcastle.	Shields.	Sunderland.	Hartlepool.	Hull.	Goole.	Grimsby.	Newport.	Cardiff.	Swansea.	Leith.	Bo'ness.	Grangemouth.	Kirkcaldy.	Glasgow.
	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
1873 ...	—	—	—	31 0	23 1	20 5	18 5	20 2	19 4	21 1	19 0	20 10	21 0	22 2	19 6	22 3	17 7	18 8	16 4	19 6
1874 ...	—	—	—	23 8	18 1	16 11	16 7	16 11	14 7	17 6	15 3	20 0	18 4	19 0	16 9	15 5	13 4	13 9	12 9	14 2
1875 ...	—	—	—	21 8	15 1	13 2	13 11	12 5	11 1	14 3	12 8	16 0	14 6	14 8	12 2	12 0	9 10	9 10	9 5	11 7
1876 ...	—	—	—	19 1	12 10	10 9	11 3	10 1	9 8	12 10	11 11	14 0	10 6	11 2	9 7	11 5	8 10	10 4	8 5	10 1
1877 ...	—	—	—	17 5	11 5	9 9	10 9	9 5	9 2	11 9	11 2	12 8	10 1	10 2	8 8	11 0	8 4	10 1	8 1	10 5
1878 ...	—	—	—	16 4	11 2	8 7	9 7	8 4	8 11	10 7	11 0	11 3	9 8	9 10	8 6	11 5	7 7	9 8	7 10	9 2
1879 ...	—	—	—	15 11	11 2	7 9	8 5	7 6	8 3	10 0	9 5	11 1	9 6	9 3	8 4	11 4	6 11	8 1	7 2	8 6
1880 ...	—	—	—	14 10	10 11	7 11	8 4	7 9	8 5	9 7	8 7	9 8	9 5	9 4	8 7	11 4	7 2	11 2	7 3	8 11
1881 ...	—	—	—	16 0	10 6	7 9	8 0	7 8	7 8	9 7	8 7	9 3	9 8	9 10	8 11	10 6	7 0	10 4	7 2	8 0
1882 ...	5 8	5 9	4 5	15 10	10 6	7 9	8 6	8 1	8 3	9 7	8 5	9 7	9 9	10 3	9 0	9 10	7 5	8 11	7 0	7 11
1883 ...	5 7	6 4	5 2	16 10	11 6	7 7	8 5	8 1	8 5	9 7	8 6	9 10	10 0	10 3	9 3	10 5	8 3	9 7	7 8	8 9
1884 ...	5 4	6 4	4 7	15 5	11 5	7 10	8 1	7 11	8 0	9 4	8 5	9 9	10 0	10 6	9 3	9 11	7 11	8 9	7 5	8 6
1885 ...	5 2	5 10	4 5	15 5	11 5	7 7	7 10	7 7	7 8	9 3	8 3	9 9	9 9	10 0	9 1	9 7	9 4	8 5	7 0	7 10
1886 ...	4 11	5 2	4 0	14 9	10 1	7 2	7 6	7 4	7 4	9 0	8 2	9 5	9 1	9 4	8 6	10 2	7 11	8 5	6 9	7 8
1887 ...	4 11	5 3	4 0	14 10	10 11	7 1	7 5	7 3	7 4	9 0	8 3	9 5	8 3	8 10	8 3	10 4	8 8	8 9	6 9	7 8
1888 ...	5 1	5 9	3 11	14 10	11 1	7 0	7 2	7 2	7 3	9 1	8 7	9 1	8 11	9 2	8 8	9 2	8 2	8 6	6 6	7 10
1889 ...	6 3	7 11	5 2	16 6	12 9	8 4	8 3	8 3	8 6	9 11	8 6	9 10	11 7	12 0	10 3	11 3	8 2	9 1	7 8	8 9
1890 ...	8 1	10 4	6 11	18 7	13 10	11 5	11 0	12 2	11 6	12 0	10 11	11 7	13 10	13 9	12 2	14 6	10 7	10 11	10 3	10 9
1891 ...	7 10	10 3	6 5	18 3	13 5	10 4	10 9	11 3	11 0	11 2	10 9	12 0	13 5	13 5	12 1	14 6	10 9	10 5	10 1	10 3
1892 ...	7 3	8 10	5 9	17 7	14 6	9 5	10 1	10 0	10 2	11 4	10 8	12 1	11 2	11 10	10 11	14 9	10 2	9 11	9 5	9 8
1893 ...	6 10	7 8	5 9	19 0	14 8	8 3	9 3	8 1	9 8	11 1	10 1	12 2	10 9	10 7	10 3	13 5	10 1	9 5	8 1	9 5
1894 ...	6 7	7 6	6 0	16 4	13 1	8 7	9 5	9 5	9 7	11 1	10 0	11 10	11 2	11 4	9 9	15 8	10 2	10 0	9 0	9 3
1895 ...	5 11	7 2	5 4	14 7	11 9	7 9	8 3	8 5	8 11	10 2	9 2	10 9	9 9	10 1	9 5	11 1	9 6	9 2	7 5	7 6
1896 ...	5 10	6 9	5 1	14 5	11 9	7 2	7 10	7 10	8 5	9 10	8 9	10 5	9 1	9 7	9 2	9 10	8 5	8 11	7 5	7 0
1897 ...	5 11	6 7	5 3	15 4	12 3	7 4	7 7	8 0	8 5	9 8	8 9	10 1	9 4	9 8	9 2	10 2	8 2	9 2	7 4	7 5
1898 ...	6 4	6 10	6 1	16 2	11 5	8 3	8 8	8 8	9 4	10 9	9 1	10 1	10 7	11 5	10 3	9 9	9 4	9 6	8 1	9 3
1899 ...	7 7	7 9	7 6	18 2	11 11	9 6	9 5	9 11	9 10	11 0	9 1	10 4	11 5	11 7	10 8	11 1	9 11	9 9	9 5	10 4

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TABLE 146.

COAL and COKE conveyed by RAILWAY, CANAL and other INLAND NAVIGATION COMPANIES in GREAT BRITAIN in 1899 and the preceding year.

RAILWAYS.

Name of Railway.	1898.	1899.
ENGLAND AND WALES.		
The Furness Railway:		
Coal:	Tons.	Tons.
Conveyed from coalfields in Whitehaven district	100,104	78,823
" " collieries situated on other railways	398,189	441,635
" ex vessel from Barrow Docks and Ulverston Canal	18,662	15,348
Coke:		
Conveyed from North Eastern district to Furness stations	573,070	601,424
" " Midland and other companies	173,256	149,148
Total of coal and coke	1,263,281	1,286,378
The Great Northern Railway:		
Conveyed from Derbyshire and Nottinghamshire	3,651,394	4,015,823
" " Durham	31,442	28,644
" " Leicestershire	102,827	107,320
" " London and North Western Railway	69,507	73,298
" " Great Central Railway (including Lancashire, Derbyshire, and East Coast Railway).	1,078,984	1,084,615
" " Staffordshire, North	35,190	46,026
" " Wales, South	35,147	83,424
" " Yorkshire, South	1,061,865	967,922
" " Do. West Riding	2,310,822	2,564,374
Total of coal only	8,377,178	8,971,446
The Great Western Railway:		
Conveyed from Gloucestershire (Forest of Dean)	172,125	160,838
" " Monmouthshire District	3,587,888	5,814,313
" " Shropshire District	167,046	197,014
" " Somersetshire (Radstock District)	386,799	426,639
" " South Staffordshire District...	235,174	197,872
" " Wales, North	1,393,106	1,423,546
" " Do. South	6,520,206	8,262,245
Total of coal and coke	12,462,344	16,482,467
The Lancashire and Yorkshire Railway:		
Conveyed from collieries in Lancashire	5,331,836	5,268,816
" " " Yorkshire	2,855,284	3,061,464
Total of coal and coke	8,187,120	8,330,280
The London and North Western Railway:		
Conveyed from collieries in Cheshire...	296,541	329,164
" " " Cumberland, West	442,029	474,482
" " " Lancashire	11,370,663	11,484,173
" " " Leicestershire	357,307	385,590
" " " Shropshire	151,694	137,127
" " " Staffordshire, North	201,675	143,601
" " " Do. South	2,448,631	2,502,537
" " " Wales, North	223,966	209,468
" " " Do. South	1,047,570	1,428,709
" " " Warwickshire	906,699	1,008,622
" " " Yorkshire	319,934	410,029
Total of coal only	17,766,709	18,513,502
The Great Central (Manchester, Sheffield, and Lincolnshire) Railway:		
Conveyed from collieries in Cheshire...	20,554	20,043
" " " Derbyshire	1,244,348	1,284,899
" " " Lancashire	—	—
" " " Lincolnshire	2,979	2,256
" " " Nottinghamshire	340,523	427,926
" " " Yorkshire	1,297,246	1,308,670
" " " Do. South	5,141,916	5,180,444
Over Liverpool, St. Helen's, and South Lancashire Railways	194,806	292,730
" Wigan Junction from Lancashire	431,028	382,294
Received from other railways	3,078,434	3,315,613
Total of coal and coke	11,751,834	12,214,875

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Coal and Coke conveyed by Railway—*continued.*

Name of Railway.	1898.	1899.
	Tons.	Tons.
The Maryport and Carlisle Railway:		
Conveyed for shipment at Maryport	95,863	99,230
Land sale	115,889	113,926
Total of coal	211,752	213,156
„ coke	28,827	26,864
The Midland Railway:		
Conveyed over the Midland System, from Cheshire	6,585	13,136
„ „ „ Cumberland	23,380	10,091
„ „ „ Derbyshire	8,971,906	9,153,344
„ „ „ Durham	138,994	122,807
„ „ „ Gloucestershire	295,426	299,682
„ „ „ Hereford	—	—
„ „ „ Lancashire	197,792	159,452
„ „ „ Leicestershire	1,687,808	1,784,262
„ „ „ Monmouthshire	—	—
„ „ „ Northumberland	6,874	18,897
„ „ „ Nottinghamshire	1,949,363	2,139,743
„ „ „ Shropshire	159	105
„ „ „ Somersetshire	57,283	47,916
„ „ „ Staffordshire	502,134	492,657
„ „ „ Warwickshire	1,116,076	1,219,989
„ „ „ Yorkshire	5,682,724	5,854,244
„ „ „ Wales	1,163,963	1,358,636
„ „ „ Scotland	13,067	13,040
Total of coal and coke (excepting gas coke)	21,813,534	22,688,001
The North Eastern Railway—		
From collieries in Durham and Northumberland } for Shipment	17,598,167	17,350,970
„ Lancashire and Yorkshire ... } for Shipment	1,336,959	1,300,205
„ Durham and Northumberland } for Land sale	11,367,956	11,610,331
„ Lancashire and Yorkshire ... } for Land sale	1,626,227	1,687,165
For North-Eastern Railway Co.'s use	902,266	972,995
Total of coal and coke	32,831,575	32,921,666
The North Staffordshire Railway:		
Conveyed to places off North Staffordshire System	1,255,935	1,210,550
Conveyed locally	880,382	935,392
Total of coal and coke	2,136,317	2,145,942
The Taff Vale Railway:		
Total of coal and coke	9,913,359	15,805,492
SCOTLAND.		
The Caledonian Railway:		
Conveyed from collieries in Ayrshire	85,508	84,631
„ „ Edinburghshire	125,165	116,574
„ „ Lanarkshire	10,929,879	10,786,298
„ „ Linlithgowshire	20,113	30,390
„ „ Renfrewshire	8,013	1,517
„ „ Stirlingshire	487,327	489,848
Received at shipping ports for conveyance inland	8,439	9,210
Conveyed from collieries in Cumberland	35,799	39,654
Total of coal and coke	11,700,243	11,558,122
The Glasgow and South Western Railway:		
Carried for home use	1,314,546	1,456,562
Carried for shipment	1,303,389	1,168,863
Total of coal only	2,617,935	2,625,425

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Coal and Coke conveyed by Railway—*continued.*

Name of Railway.	1898.	1899.
The North British Railway:	Tons.	Tons.
Coal and Coke traffic arising in the district of Canobie (Dumfriesshire) ...	15,029	12,326
" " " Fifeshire (Northern Section) ...	4,191,680	4,341,001
" " " Monklands (Western Section) ...	6,826,188	6,857,102
" " " The Lothians, East of Edinburgh	1,264,573	1,302,499
" " " From other places on Southern Section.	92,795	89,776
Total of Coal and Coke	*12,390,265	†12,602,704
* Including 942,706 tons shipped at Burntisland Dock and 1,340,564 tons at Methil Docks.		
† " 893,311 " " " " 1,332,912 " " "		
IRELAND.		
Belfast and County Down Railway	50,235	61,561
Belfast and Northern Counties Railway (including Derry Central, Limavady, and Dungiven Lines).	149,993	163,780
Cork, Bandon, and South Coast Railway	8,392	10,495
Dublin, Wicklow, and Wexford Railway:		
Conveyed from Dublin, Kingstown, Wicklow, Arklow, Wexford, and New Ross	26,514	31,953
Dundalk, Newry, and Greenore Railway	9,378	7,734
Great Northern Railway	274,828	287,164
Great Southern and Western Railway	271,403	280,206
Midland Great Western Railway	59,850	63,770
Sligo, Leitrim, and Northern Counties Railway	7,248	8,450
Waterford and Central Ireland Railway	25,327	27,065
Waterford, Limerick, and Western Railway	65,614	64,847

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TABLE 147.

COAL and COKE conveyed by CANALS and INLAND NAVIGATIONS.

Name of Company.	1898.	1899.
ENGLAND		
The Birmingham Canal Navigations:	Tons.	Tons.
Conveyed for supply of Birmingham	783,049	780,268
„ viâ Worcester Canal	85,417	85,352
„ „ Warwick Canal	17,877	17,654
„ „ Coventry Canal	8,416	10,788
„ „ Staffordshire and Worcestershire Canal	76,666	73,683
„ from Whittington to Fazeley	422	1,263
„ for supply of works in the mining districts	3,571,161	3,605,137
Total of coal and coke	4,543,008	4,574,145
The Bridgewater Canals—The Manchester Ship Canal Co.:		
Conveyed from Wigan district	175,782	189,968
„ Worsley and other collieries	413,053	402,377
Total of coal, including a small quantity of coke	588,835	592,345
The Gloucester and Berkeley Canal—Sharpness New Docks and Gloucester and Birmingham Navigation Co.:		
Total of coal only	105,724	105,099
The Leeds and Liverpool Canal Co.:		
Conveyed from Yorkshire	244,369	241,136
„ Lancashire	1,051,762	1,016,679
Total of coal, including a small quantity of coke	1,296,131	1,257,815
The Severn Navigation—Conveyed from the following Stations:		
Lincomb	34,656	35,870
Diglis	5,768	4,177
Gloucester	3,850	3,062
Total of coal, including a small quantity of coke	44,274	43,109
The Shropshire Union Canal:		
Total of coal and coke	54,676	51,660

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Coal and Coke conveyed by Canals and Inland Navigations—*continued.*

Name of Company.	1898.	1899.
The Staffordshire and Worcestershire Canal:	Tons.	Tons.
Total of coal and coke	289,586	311,631
The Trent and Mersey Navigation:		
Conveyed to places off the North Staffordshire system	39,495	39,677
Conveyed locally...	220,869	226,208
Total of coal and coke	260,364	265,885
SCOTLAND.		
The Forth and Clyde Canal:		
Total of coal and coke	133,202	132,453
The Monkland Canal:		
Total of coal and coke	63,630	58,117
The Union Canal:		
Total of coal and coke	49,466	41,963
The Caledonian Canal:		
Total of coal and coke	7,474	9,389
The Crinan Canal:		
Total of coal and coke	43,332	53,507
IRELAND.		
The Grand Canal:		
Imported coal conveyed inland from the Port of Dublin by Grand Canal Company	19,569	21,826
Imported coal conveyed inland from the Port of Dublin by Trader's boats ...	22,351	20,552
Total quantities carried over the Canal	41,920	42,378

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COAL, &c., SHIPPED COASTWISE.

TABLE 148.

QUANTITIES of COAL, COKE, and PATENT FUEL shipped COASTWISE to various PORTS of the UNITED KINGDOM in the Year 1899 and the preceding year. (Return by Board of Customs.)

Ports from which shipped.	Coal.	Coke.	Patent Fuel.	Total of Coal, Coke, and Patent Fuel.
ENGLAND AND WALES.	Tons.	Tons.	Tons.	Tons.
London	36,048	4,374	—	40,422
Rochester	699	—	—	699
Ramsgate	—	1,510	—	1,510
Portsmouth	10,308	13,000	—	23,308
Cowes	2,118	56	—	2,174
Southampton	5,293	72	—	5,365
Weymouth	—	100	—	100
Plymouth	722	65	—	787
Fowey	20	—	—	20
Falmouth	260	40	—	300
Bristol	1,521	6,620	—	8,141
Gloucester	376,998	—	—	376,998
Newport	891,146	4,310	—	895,456
Cardiff	2,337,915	100	—	2,338,015
Swansea	385,309	116	260	385,685
Do. Briton Ferry	174,768	—	—	174,768
Do. Port Talbot	109,072	171	—	109,243
Do. Porth Cawl	21,229	—	—	21,229
Llanelly	77,996	—	—	77,996
Milford	19,050	—	—	19,050
Chester	103,211	—	—	103,211
Liverpool	1,262,002	4,800	—	1,266,802
Manchester	273,631	512	—	274,143
Preston	65,791	—	—	65,791
Fleetwood	903	—	—	903
Lancaster	4,059	—	—	4,059
Barrow	100	—	—	100
Whitehaven	280,692	—	—	280,692
Workington	132,514	—	—	132,514
Maryport	208,621	60	—	208,681
Carlisle	24,102	70	—	24,172
Blyth	416,426	—	—	416,426
Newcastle	4,902,572	11,887	—	4,914,459
Shields, North	12,817	—	—	12,817
Do. South	136,365	120	—	136,485
Sunderland	2,486,272	1,598	2,575	2,490,445
Hartlepool	573,754	40	—	573,794
Middlesbrough	931	484	—	1,415
Hull	309,966	—	—	309,966
Goole	592,165	2,920	—	595,085
Grimsby	155,528	—	—	155,528
Boston	47,200	—	—	47,200
Lynn	3,740	—	—	3,740
Ipswich	155	2,392	—	2,547
Harwich	323	80	—	403
SCOTLAND.				
Leith	32,343	—	240	32,583
Granton	2,394	—	—	2,394
Borrowstoness	43,900	20	—	43,920
Grangemouth	9,513	—	—	9,513
Alloa	32,817	—	—	32,817
Kirkcaldy	52,905	—	—	52,905
Fraserburgh	14	—	—	14
Campbeltown	2,670	—	—	2,670
Glasgow	336,250	10,141	—	346,391
Greenock	30,582	352	10	30,944
Ardrossan	82,401	12	—	82,413
Troon	267,006	—	—	267,006
Irvine	153,442	—	—	153,442
Ayr	420,710	280	5	420,995
IRELAND	Nil	Nil	Nil	Nil
Total for 1899 ...	**17,911,259**	**66,302**	**3,090**	**17,980,651**
Total for preceding Year...	17,475,255	129,890	5,531	17,610,676

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COAL, &c., SHIPPED COASTWISE—*continued.*

TABLE 149.

COAL and PATENT FUEL received COASTWISE at various PORTS of the UNITED KINGDOM in the Year 1899 and the preceding year. (Return by Board of Customs.)

Ports at which received.	Coal and Patent Fuel received Coastwise at the various Ports of the United Kingdom.		Ports at which received.	Coal and Patent Fuel received Coastwise at the various Ports of the United Kingdom.	
	Coal.	Patent Fuel.		Coal.	Patent Fuel.
ENGLAND AND WALES.	Tons.	Tons.	SCOTLAND.	Tons.	Tons.
London	7,535,292	3,090	Leith	2,087	—
Rochester	587,917	—	Kirkcaldy	3,144	—
Faversham	113,155	—	Perth	200	—
Ramsgate	75,126	—	Dundee	40,490	—
Dover	100,813	—	Arbroath	14,318	—
Folkestone	53,090	—	Montrose	34,067	—
Newhaven	108,727	—	Aberdeen	560,058	—
Shoreham	106,654	255	Peterhead	22,626	—
Littlehampton	34,015	—	Fraserburgh	18,304	—
Portsmouth	352,851	—	Banff	25,720	—
Cowes	142,610	34	Inverness	146,888	—
Southampton	517,608	—	Wick	25,560	95
Poole	62,142	—	Kirkwall	29,014	—
Weymouth	89,618	—	Lerwick	8,444	—
Exeter	42,083	—	Stornoway	6,958	—
Teignmouth	54,057	—	Campbeltown	22,631	—
Dartmouth	158,050	—	Glasgow	8,925	—
Plymouth	488,707	470	Greenock	93,720	—
Fowey	136,814	—	Ardrossan	3,079	—
Truro	50,105	—	Troon	130	—
Falmouth	56,155	—	Irvine	1,918	—
Penzance	213,831	—	Stranraer	10,796	—
Scilly	3,295	—	Wigtown	3,650	—
Padstow	30,026	—	Dumfries	5,258	—
Barnstaple	174,535	—			
Bridgwater	231,584	330			
Bristol	281,488	—	Total for Scotland ...	1,087,985	95
Gloucester	22,459	—			
Newport	3,055	—			
Cardiff	10,952	—			
Swansea	4,300	—			
Milford	28,907	—			
Cardigan	10,148	—	IRELAND.		
Aberystwith	6,409	—			
Carnarvon	25,849	—	Dublin	1,108,077	—
Beaumaris	32,362	—	Wexford	74,226	—
Douglas, Isle of Man ...	72,259	5	Waterford	221,016	—
Castletown, Isle of Man	10,483	—	Cork	441,750	—
Ramsay, Isle of Man ...	20,875	—	Skibbereen	30,578	—
Liverpool	332,207	—	Tralee	28,229	—
Fleetwood	4,852	—	Limerick	101,343	—
Lancaster	550	—	Galway	19,606	—
Barrow	42,721	—	Westport	7,732	—
Whitehaven	5,491	—	Sligo	46,462	—
Workington	33,230	—	Londonderry	179,208	—
Berwick	1,135	—	Coleraine	34,998	—
Newcastle	1,585	—	Belfast	1,446,904	—
Hartlepool	1,300	—	Newry	207,504	—
Stockton	190	—	Dundalk	108,191	5
Middlesbrough	10,248	—	Drogheda	46,401	—
Whitby	9,963	—			
Scarborough	3,495	—			
Hull	6,146	—	Total for Ireland ...	4,102,225	5
Boston	2,005	—			
Lynn	14,915	—			
Yarmouth	66,476	—			
Lowestoft	58,488	—			
Ipswich	71,710	130			
Harwich	22,149	—			
Colchester	27,077	—	**Total for 1899 ...**	**17,954,549**	**4,414**
Total for England ...	12,764,339	4,314	Total for preceding Year.	17,305,606	4,868

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COAL, &c., IMPORTED.

TABLE 150.

STATEMENT showing the QUANTITY and VALUE of COAL, CULM, and CINDERS Imported into the UNITED KINGDOM during the Year 1899 and the preceding year, distinguishing the COUNTRIES whence imported. (Return by Board of Customs.)

Countries whence Imported.	Quantity.	Value.
	Tons.	£
Belgium	13	4
China	10	7
Germany	796	641
Holland	10	9
Italy	25	23
Natal	10	4
New South Wales	854	2,680
Russia, Northern Ports	10	10
United States, Atlantic Ports	21	19
Total in 1899	**1,749**	**3,397**
Total in preceding Year	11,015	16,310

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COAL, &c., EXPORTED.

TABLE 151.

COUNTRIES to which COAL, COKE, and PATENT FUEL were Exported.
(Return by Board of Customs.)

Countries to which Exported.	Quantities Exported.				Declared Value Thereof.			
	Coal.	Coke.	Patent Fuel.	Total of Coal, Coke, and Patent Fuel.	Coal.	Coke.	Patent Fuel.	Total of Coal, Coke, and Patent Fuel.
	Tons.	Tons.	Tons.	Tons.	£	£	£	£
Russia :								
Northern Ports	3,047,489	84,407	28,436	3,160,332	1,599,101	82,570	17,937	1,699,608
Southern Ports	226,785	426	10,149	237,360	145,184	477	6,000	151,661
Sweden	2,990,641	58,480	—	3,049,121	1,534,203	47,002	—	1,581,205
Norway	1,374,522	70,486	—	1,445,008	687,119	53,038	—	740,157
Denmark	2,015,437	37,370	—	2,052,807	1,008,231	25,551	—	1,033,782
Germany	5,029,515	21,286	7,772	5,058,573	2,321,009	18,382	4,541	2,343,932
Holland	1,195,384	93,425	20	1,288,829	556,333	48,491	15	604,839
Belgium	741,133	37,473	231	778,837	329,554	33,818	171	363,543
Channel Islands	141,345	95	—	141,440	77,785	58	—	77,843
France	6,646,865	20,620	202,880	6,870,365	3,303,230	19,100	126,178	3,448,508
Portugal, Azores, and Madeira ...	741,185	10,985	50	752,220	414,901	6,754	33	421,688
Spain and Canaries	2,056,752	159,549	75,138	2,291,439	1,148,779	150,832	46,260	1,345,871
Gibraltar	326,804	34	—	326,838	191,156	36	—	191,192
Italy	5,235,508	38,323	253,164	5,526,995	2,727,004	36,557	158,461	2,922,022
Austrian Territories	224,100	15,581	36,693	276,374	121,562	13,426	22,908	157,896
Malta	418,723	738	—	419,461	250,249	750	—	250,999
Greece	335,594	37,213	22,565	395,372	204,130	35,563	13,938	253,651
Bulgaria.	1,716	10	100	1,826	1,008	12	74	1,094
Roumania	207,976	3,247	—	211,223	120,276	1,835	—	122,111
Turkey	461,797	971	28,107	490,875	266,525	725	17,365	284,615
Egypt	2,083,783	17,998	24,143	2,125,924	1,195,046	11,364	14,453	1,220,863
Tripoli and Tunis	39,272	—	21,988	61,260	21,449	—	13,294	34,743
Algeria	387,394	486	113,788	501,668	217,627	518	70,411	288,556
Morocco	1,014	—	—	1,014	605	—	—	605
Spanish Ports in Northern Africa	1,045	—	778	1,823	430	—	398	828
Western Coast of Africa ...	482,691	204	7,056	489,951	306,449	225	4,572	311,246
Ascension	2,492	19	—	2,511	1,507	24	—	1,531
St. Helena	3,303	—	—	3,303	2,312	—	—	2,312
British Possessions in South Africa.	496,148	5,774	—	501,922	319,867	6,634	—	326,501
Eastern Coast of Africa	44,292	985	1,964	47,241	30,299	1,027	1,456	32,782
Abyssinia	11,901	—	700	12,601	6,331	—	420	6,751
Madagascar	23,109	—	4,252	27,361	13,794	—	3,003	16,797
Bourbon (Réunion)	2,134	—	—	2,134	1,387	—	—	1,387
Mauritius and Dependencies ...	30,376	290	385	31,051	18,792	423	328	19,543
Aden and Dependencies	176,397	15	—	176,412	101,904	8	—	101,912
Persia	3,595	—	—	3,595	2,137	—	—	2,137
British East Indies :								
Continental Territories ...	432,890	14,772	8,521	456,183	240,892	15,147	5,320	261,359
Straits Settlements	81,868	2,108	—	83,976	49,712	2,202	—	51,914
Ceylon	327,748	53	—	327,801	194,948	67	—	195,015
Dutch Possessions in the Indian Seas.	46,407	1,113	—	47,520	28,440	1,253	—	29,693
Philippine Islands	—	51	—	51	—	57	—	57
Siam	3,850	161	—	4,011	2,406	183	—	2,589
French Indo-China	1,700	50	3,503	5,253	1,724	74	2,252	4,051
China and Hong Kong	75,727	6,002	—	81,729	45,284	6,213	—	51,497
Japan	62,088	4,738	—	66,826	41,715	5,328	—	47,043
Australasia	1,442	17,522	—	18,964	804	22,018	—	22,822
Islands in the Pacific	700	309	—	1,009	443	406	—	849
British North America	60,469	185	—	60,654	32,978	185	—	33,163
United States of America :								
On the Atlantic	4,887	10	—	4,897	6,469	20	—	6,489
On the Pacific	114,534	25,123	—	139,657	68,056	23,911	—	91,967
Bermudas.	13,745	126	—	13,871	9,455	191	—	9,646
British West Indies	78,808	116	16,257	95,181	45,277	152	10,374	55,803
Foreign West Indies	49,014	1,672	320	51,006	30,171	963	172	31,306
Mexico	26,705	17,230	94,571	138,506	17,838	17,396	54,932	90,166
Central America	2,487	126	8,637	11,250	1,477	121	5,377	6,975
Republic of Colombia	11,994	—	855	12,849	7,030	—	593	7,623
Venezuela	417	65	15,984	16,466	191	38	9,761	9,990
Ecuador	767	43	—	810	416	49	—	465
Peru	26,816	1,084	—	27,900	16,144	1,232	—	17,376
Chili	283,526	37,582	31,893	353,101	166,152	38,214	17,986	222,352
Brasil	920,414	7,369	40,284	968,067	589,620	7,265	23,835	620,720
Uruguay	352,324	3,018	—	355,342	213,166	2,934	—	216,100
Argentine Republic	988,608	10,177	2,466	1,001,251	630,886	7,930	1,187	640,003
Falkland Islands...	1,847	—	127	1,974	1,199	—	102	1,301
Whale Fisheries, Northern ...	333	—	—	333	226	—	—	226
Total for 1899 ...	**41,180,332**	**867,295**	**1,063,777**	**43,111,404**	**21,690,394**	**748,749**	**654,107**	**23,093,250**
Total for preceding Year ...	35,058,430	769,742	734,624	36,562,796	17,155,823	551,116	428,563	18,135,502

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COAL, &c., EXPORTED—*continued.*

TABLE 152.

PORTS from which COAL, COKE, and PATENT FUEL were Exported. (Return by Board of Customs.)

Ports whence Exported.	Quantities Exported.				Declared Value Thereof.			
	Coal.	Coke.	Patent Fuel.	Total of Coal, Coke, and Patent Fuel.	Coal.	Coke.	Patent Fuel.	Total of Coal, Coke, and Patent Fuel.
ENGLAND AND WALES.	Tons.	Tons.	Tons.	Tons.	£	£	£	£
London	6,884	64,009	666	71,559	6,268	52,451	631	59,350
Folkestone	—	154	—	154	—	108	—	108
Portsmouth	—	50	—	50	—	37	—	37
Southampton	85	463	—	548	82	392	—	474
Weymouth	—	—	—	—	—	—	—	—
Exeter	—	—	—	—	—	—	—	—
Plymouth	928	299	—	1,227	784	209	—	993
Bristol	205	3,723	—	3,928	172	1,911	—	2,083
Gloucester	4,005	—	—	4,005	2,083	—	—	2,083
Newport	2,928,135	12,313	93,168	3,033,616	1,674,239	10,893	55,222	1,740,354
Cardiff	13,805,088	71,031	433,717	14,309,836	7,966,907	70,531	271,095	8,308,533
Swansea	1,504,899	23,815	508,127	2,036,841	806,788	25,487	311,147	1,143,422
Do. Briton Ferry	84,294	1,396	1,385	87,075	37,702	1,271	917	39,890
Do. Port Talbot	96,921	3,401	—	100,322	57,150	3,233	—	60,383
Do. Porth Cawl	—	—	—	—	—	—	—	—
Llanelly	182,458	—	—	182,458	116,645	—	—	116,645
Milford	874	—	—	874	655	—	—	655
Douglas	—	175	—	175	—	140	—	140
Chester	1,606	—	—	1,606	817	—	—	817
Liverpool	426,179	18,785	216	445,180	254,723	14,885	161	269,769
Manchester	117,819	420	2,182	120,421	77,554	205	1,115	78,874
Runcorn	22,518	—	—	22,518	11,211	—	—	11,211
Preston	3,617	1,790	—	5,407	1,822	1,155	—	2,977
Fleetwood	8,319	43	—	8,362	4,472	22	—	4,494
Lancaster	487	—	—	487	320	—	—	320
Whitehaven	—	—	—	—	—	—	—	—
Workington	—	—	—	—	—	—	—	—
Maryport	538	—	—	538	283	—	—	283
Blyth	3,066,360	14,351	—	3,080,711	1,374,600	8,842	—	1,383,442
Newcastle	3,278,990	205,094	—	3,484,084	1,556,811	189,722	—	1,746,563
Shields, North	569,117	8,389	—	577,506	293,640	7,870	—	301,510
Do. South	3,007,049	194,725	—	3,201,774	1,393,581	188,623	—	1,582,204
Sunderland	1,917,683	40,749	23,882	1,982,314	953,014	30,018	13,525	996,557
Hartlepool	434,962	23,149	—	458,111	214,251	18,047	—	232,298
Stockton	954	—	—	954	515	—	—	515
Middlesbrough	32,538	42,680	—	75,218	19,342	45,663	—	65,005
Scarborough	—	250	—	250	—	155	—	155
Hull	1,792,869	18,862	—	1,811,731	982,686	13,760	—	996,446
Goole	756,251	28,823	—	785,074	343,446	16,839	—	360,285
Grimsby	1,089,103	336	—	1,089,439	564,704	162	—	564,866
Boston	99,341	—	—	99,341	55,459	—	—	55,459
Wisbech	7,872	—	—	7,872	5,222	—	—	5,222
Lynn	152,450	—	—	152,450	77,807	—	—	77,807
SCOTLAND.								
Leith	451,317	7,147	26	458,490	250,022	5,090	16	255,128
Granton	111,810	30	—	111,840	56,746	16	—	56,762
Borrowstoness	446,568	1,903	200	448,671	220,538	1,076	150	221,764
Grangemouth	1,268,462	64,415	20	1,332,897	620,075	29,695	15	649,785
Alloa	236,537	588	—	237,125	108,313	250	—	108,563
Kirkcaldy	2,044,904	502	—	2,045,406	961,176	315	—	961,491
Dundee	3,698	476	—	4,174	2,455	214	—	2,669
Aberdeen	—	—	—	—	—	—	—	—
Peterhead	30	—	—	30	30	—	—	30
Glasgow	919,996	12,152	—	932,148	473,445	8,532	—	481,977
Greenock	32,704	—	—	32,704	16,621	—	—	16,621
Ardrossan	121,182	757	—	121,939	59,369	880	—	60,249
Troon	98,347	—	—	98,347	44,531	—	—	44,531
Irvine	17,501	—	—	17,501	8,938	—	—	8,938
Ayr	24,039	50	188	24,277	11,430	50	113	11,593
IRELAND.								
Cork	600	—	—	600	300	—	—	300
Belfast	1,239	—	—	1,239	620	—	—	620
Total for 1899	41,180,332	867,295	1,063,777	43,111,404	21 690,394	748,749	654,107	23,093,250
Total for preceding Year	35,058,430	769,742	734,624	36,562,796	17,155,823	551,116	428,563	18,135,502

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TABLE 153.

SUMMARY of QUANTITIES of COAL, COKE, and PATENT FUEL shipped COASTWISE and Exported in the Year 1899 and the preceding Year. (Return by Board of Customs.)

Shipments.	1898.		1899	
	Quantities.	Value.	Quantities.	Value.
Coastwise:	Tons.	£	Tons.	£
Coal...	17,475,255	—	17,911,259	—
Coke	129,890	—	66,302	—
Patent Fuel	5,531	—	3,090	—
Total	17,610,676	—	**17,980,651**	—
To Foreign Countries:				
Coal...	35,058,430	17,155,823	41,180,332	21,690,394
Coke	769,742	551,116	867,295	748,749
Patent Fuel	734,624	428,563	1,063,777	654,107
Total	36,562,796	18,135,502	**43,111,404**	**23,093,250**
For use of Steamers engaged in the Foreign Trade ...	11,264,204	—	**12,226,801**	—

Cobalt Ore.

Small quantities of asbolane, containing both nickel and cobalt, were obtained from a mine in Flintshire a few years ago.

TABLE 154.

The Annual Output and Value of COBALT and NICKEL ORE in the United Kingdom from the Year 1873.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	$\frac{6}{10}$	12	1882	38	241	1891	Nil	—
1874	Nil	—	1883	49	173	1892	„	—
1875	„	—	1884	66	237	1893	„	—
1876	$\frac{7}{10}$	—	1885	109	422	1894	„	—
1877	27	242	1886	100	526	1895	„	—
1878	99	617	1887	154	900	1896	„	—
1879	117	833	1888	152	746	1897	„	—
1880	49	297	1889	155	968	1898	„	—
1881	64	310	1890	84	260	**1899**	„	—

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Copper Ore.

Copper mining is an industry which is rapidly decreasing in importance in Britain. In 1863 the production of Copper Ore and Copper Precipitate amounted to upwards of 210,000 tons, valued at over a million sterling, whereas in 1899 the production was only 8,319 tons, valued at £35,348. Cornwall and Devonshire are the main sources of supply of this ore, and Copper Precipitate is being obtained from cupreous water pumped up from the old mines on Parys Mountain in Anglesey.

The amount of copper obtained by smelting British ores is about $\frac{1}{25}$, or 4 per cent. more than the amount calculated from the dry assay. Thus, in the case of an ore containing 5 per cent. of metal by dry assay, the actual yield has been taken at $5\frac{1}{5}$ per cent.

TABLE 155.

SUMMARY of the OUTPUT of COPPER ORE and COPPER PRECIPITATE.

County.	Copper Ore.	Comparison with preceding Year.	Metallic Copper obtainable by Smelting.	Value of Ore at the Mines.
COPPER ORE.				
ENGLAND:	Tons.	Tons.	Tons.	£
Cornwall	5,172	— 121	367	21,487
Devon	990	— 94	65	2,292
Lancaster	7	+ 7	½	18
Total	6,169	— 208	432½	23,797
WALES:				
Anglesey	275	+ 245	20¾	1,050
Carnarvon	620	+ 570	70½	2,578
Merioneth	526	— 2,018	50¾	5,779
Montgomery	21	+ 21	2	61
Total	1,442	— 1,182	144½	9,468
IRELAND:				
Wicklow	533*	+ 533	17	533†
Totals for United Kingdom	8,144	— 857	594	33,798
COPPER PRECIPITATE.				
WALES:				
Anglesey	175	+ 45	43	1,550
Total for 1899	**8,319**	**— 812**	**637**	**35,348**
Total for preceding Year	9,131	+ 1,779	640¼	27,149

* Cupreous pyrites. † Estimated.

The value of the 637 tons of Metallic Copper obtainable in 1899, according to the Mean of Monthly Prices of "Best Selected" British Copper in the London Market, for the year is £49,768.

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TABLE 156.

DETAILS of OUTPUT of COPPER ORE.

Name and Situation of Mine.	Dressed Copper Ore.	Percentage of Metal by Dry Assay.	Amount of Metal obtainable by Smelting.	Value of Ore at the Mine.
ENGLAND.				
CORNWALL:	Tons.		Tons.	£
Belovely, Roche	1	—	—	42
Carn Brea and Tincroft, Carn Brea	1,294	—	—	2,549
Dolcoath, Camborne	4	—	—	23
East Pool and Agar United, Illogan	22	—	—	106
Levant, St. Just	3,627	—	—	17,827
Wheal Polmear, St. Austell	224	—	—	940
Total	5,172	—	367	21,487
DEVONSHIRE:				
Devon Great Consols, Tavistock	837	—	—	2,224
Gawton, Tavistock	153	—	—	68
Total	990	—	65	2,292
LANCASTER:				
Coniston, Coniston	7	8	½	18
WALES.				
ANGLESEY:				
Mona, Amlwch	75	8	6¼	350
Parys, Amlwch	200	7	14½	700
Total	275	—	20¾	1,050
CARNARVONSHIRE:				
Britannia, Snowdon	607	9	57	2,501
Drws-y-coed, Beddgelert	13	10	1½	77
Total	620	—	70½	2,578
MERIONETHSHIRE:				
Glasdir Copper Mines, Dolgelly	474	10	49¼	5,688
Pantywrach, Penrhyndeudraeth	52	3	1½	91
Total	526	—	50¾	5,779
MONTGOMERYSHIRE:				
Nant-y-rickett, Llanidloes	21	11	2½	61
IRELAND.				
WICKLOW:				
Cronbane, Avoca Tigroney, Avoca	533*	3	17	533†

* Cupreous pyrites. † Estimated.

TABLE 157.

COPPER PRECIPITATE.

Name and Situation of Mine.	Copper Precipitate.	Percentage of Metal by Dry Assay.	Amount of Metal obtainable by Smelting.	Value of Precipitate at the Mine.
WALES.				
ANGLESEY:	Tons		Tons.	£
Mona, Amlwch	130	25	33¾	1,300
Parys, Amlwch	45	20	9¼	250
Total	175	—	43	1,550

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TABLE 158.

Annual Output and Value of COPPER ORE and COPPER PRECIPITATE in the United Kingdom from the Year 1873 to 1899.

Year.	Copper Ore.		Precipitate.		Year.	Copper Ore.		Precipitate.	
	Quantity.	Value.	Quantity.	Value.		Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£		Tons.	£	Tons.	£
1873	80,188	342,708	60	Not given	1887	9,079	20,982	280	3,075
1874	78,521	336,414	175	„	1888	15,132	60,980	418	6,539
1875	71,528	333,414	211	„	1889	9,029	26,584	281	3,113
1876	79,252	317,186	770	„	1890	12,136	27,801	345	4,670
1877	73,141	262,271	628	„	1891	8,836	20,214	322	4,355
1878	56,094	201,434	532	„	1892	5,995	11,953	270	3,112
1879	51,032	177,383	362	„	1893	5,346	12,961	230	2,210
1880	52,118	190,668	330	„	1894	5,752½	13,909	241½	2,313
1881	52,556	190,057	587	„	1895	7,531	21,912	260	2,855
1882	52,810	206,738	427	3,658	1896	8,970	21,586	198	2,124
1883	46,288	145,904	531	3,701	1897	7,132	18,706	220	2,320
1884	41,728	109,427	421	3,186	1898	9,001	25,849	130	1,300
1885	36,241	79,763	138	1,149	**1899**	**8,144**	**33,798**	**175**	**1,550**
1886	18,205	38,567	412	2,831					

TABLE 159.

MEAN MONTHLY PRICES of METALLIC COPPER per Ton in the LONDON MARKET.

Month.	British Copper.		Foreign Copper.
	Tough Cake and Ingot.	Best Selected.	Chili Bars.
1899.	£ s. d.	£ s. d.	£ s. d.
January	66 1 11	66 13 9	62 15 11
February	77 8 9	78 8 9	72 14 1
March	73 5 0	73 17 0	68 16 0
April	77 5 0	78 5 0	74 12 0
May	79 16 3	80 11 3	76 14 10
June...	79 7 0	80 5 0	76 7 0
July	80 3 2	80 18 2	77 0 5
August	79 16 3	80 13 2	76 4 10
September	79 14 0	80 18 0	76 14 3
October	79 1 3	80 10 0	75 8 5
November	79 1 3	79 13 9	74 0 11
December	75 18 0	76 17 0	71 4 9
Highest prices	81 0 0	81 12 6	78 0 0
Lowest prices	61 15 0	62 0 0	59 3 9
Mean of monthly prices for 1899 ...	**77 4 10**	**78 2 7**	**73 11 1**
Mean prices for preceding Year...	54 14 8	55 9 8	51 17 9

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TABLE 160.

Table showing the average Price per Ton of METALLIC COPPER in the London Market for each Year from 1873 to 1899.

Year.	English Copper.						Foreign Copper.		
	Tough Cake.			Best Selected.			Burra Burra.		
	£	s.	d.	£	s.	d.	£	s.	d.
1873	93	13	6	95	18	0	92	5	6
1874	84	0	0	89	12	0	89	0	0
1875	88	9	0	90	0	0	91	6	0
1876	81	19	6	83	6	2	83	3	3
1877	74	12	6	75	16	0	75	11	6
1878	67	3	0	68	11	6	70	1	6
1879	63	1	3	64	5	6	65	5	6
1880	67	15	0	69	5	0	72	10	0
1881	66	10	0	68	0	0	67	13	0
1882	71	0	0	73	0	0	71	10	0
1883	67	5	3	69	3	3	68	14	6
1884	59	2	1	60	9	6	61	9	10
1885	47	12	10	48	16	8	52	11	8
							Chili Bars.		
1886	43	8	0	44	10	6	40	5	6
1887	46	16	0	48	4	0	43	10	8
1888	77	17	0	79	11	4	81	8	1
1889	53	18	5	55	3	10	49	11	4
1890	58	19	10	61	11	10	54	7	7
1891	54	12	4	56	11	2	51	12	8
1892	48	14	0	49	18	10	45	15	7
1893	47	0	8	48	3	11	43	16	4
1894	42	16	10	43	12	8	40	9	6
1895	46	5	9	47	1	4	43	2	8
1896	49	17	8	50	13	8	47	0	6
1897	51	12	0	52	5	8	49	3	6
1898	54	14	8	55	9	8	51	17	9
1899	**77**	**4**	**10**	**78**	**2**	**7**	**73**	**11**	**1**

TABLE 161.

EXPORTS from the UNITED KINGDOM of BRITISH COPPER ORE and of METALLIC COPPER (produced in this Country, mainly from Foreign Ores) in the Year 1899 and preceding Year. (Return by Board of Customs.)

PORTS WHENCE EXPORTED.	Ore.	Unwrought in Bricks, Pigs, &c.	Mixed or Yellow Metal.	Wrought Copper of other sorts.	Total of Copper (exclusive of Ore).
	Tons.	Tons.	Tons.	Tons.	Tons.
London	—	634	3,521	3,172	7,327
Liverpool	—	8,172	2,257	3,174	13,603
Blyth	—	5	2	—	7
Boston	—	10	—	1	11
Bristol	—	1,014	81	80	1,175
Cardiff	—	25	41	26	92
Dover	—	—	5	—	5
Folkestone	—	—	—	7	7
Goole	—	1	11	71	83
Grimsby	—	—	8	104	112
Harwich	—	3	15	24	42
Hull	—	688	168	910	1,766
Llanelly	—	300	—	31	331
Manchester	—	—	2	101	103
Middlesbrough	—	13	—	101	114
Newcastle	—	7,355	—	12	7,367
Newhaven	—	—	—	6	6
Newport	—	36	43	15	94
Shields, North	—	277	—	8	285
Do. South	—	541	94	10	645
Southampton	—	2	53	205	260
Swansea	—	12,717	593	2,907	16,217
Weymouth	—	—	4	4	8
Other ports of England	—	—	2	1	3
Dundee	—	5	—	—	5
Glasgow	—	22	14	67	103
Grangemouth	—	—	—	1	1
Leith	—	100	—	10	110
Total export for 1899	—	**31,920**	**6,914**	**11,048**	**49,882**
Total for preceding Year	2	26,663	10,222	13,579	50,464

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Exports of British Copper Ore and Copper from the United Kingdom—*continued.*

COUNTRIES TO WHICH EXPORTED.	Ore.	Unwrought in Bricks, Pigs, &c.	Mixed or Yellow Metal.	Wrought Copper of other sorts.	Total of Copper (exclusive of Ore).
	Tons.	Tons.	Tons.	Tons.	Tons.
Russia: Northern Ports	—	2,498	9	320	2,827
Southern Ports	—	125	—	40	165
Sweden	—	660	38	660	1,358
Norway	—	9	242	320	571
Denmark	—	430	8	155	593
Germany	—	5,693	410	458	6,561
Holland	—	6,296	86	667	7,049
Belgium	—	1,274	10	219	1,503
Channel Islands	—	—	4	5	9
France	—	6,290	40	1,852	8,182
Portugal, Azores, and Madeira	—	11	89	230	330
Spain and the Canaries	—	67	53	126	246
Gibraltar	—	—	2	11	13
Italy	—	2,119	352	358	2,829
Austrian Territories	—	699	16	26	741
Malta	—	—	11	3	14
Greece	—	—	19	89	108
Bulgaria	—	—	—	20	20
Roumania	—	—	—	47	47
Turkey: European	—	1	—	215	216
Asiatic and Cyprus	—	2	1	378	381
Egypt	—	1	19	594	614
Tripoli and Tunis	—	—	—	5	5
Morocco	—	—	4	11	15
West Coast of Africa	—	—	40	35	75
East Coast of Africa	—	1	7	14	22
British Possessions in South Africa	—	5	28	203	236
Mauritius	—	—	26	18	44
Arabia, Muscat	—	—	—	25	25
Aden and Dependencies	—	—	5	4	9
Persia	—	—	3	5	8
British East Indies	—	90	3,195	1,123	4,408
Java	—	3	27	127	157
Philippine Islands	—	1	70	21	92
Siam	—	—	4	2	6
French Indo-China	—	—	1	—	1
China	—	194	175	144	513
Hong Kong	—	16	700	157	873
Japan	—	5	96	212	313
Australasia: West Australia	—	—	29	37	66
South Australia	—	—	3	60	63
Victoria	—	—	2	188	190
New South Wales	—	1	363	281	645
Queensland	—	18	82	83	183
Tasmania	—	—	1	7	8
New Zealand	—	4	67	169	240
Fiji Islands	—	—	2	1	3
Islands in the Pacific	—	—	15	3	18
British North America	—	138	193	169	500
United States of America:					
On the Atlantic	—	5,177	86	9	5,272
On the Pacific	—	—	1	1	2
British West India Islands and British Guiana	—	1	39	52	92
Foreign West Indies	—	—	29	103	132
Honduras (British)	—	—	—	6	6
Mexico	—	6	4	43	53
Central America	—	—	3	4	7
Republic of Colombia	—	2	5	29	36
Venezuela	—	—	2	13	15
Ecuador	—	—	—	5	5
Peru	—	—	14	21	35
Chili	—	1	59	85	145
Brazil	—	23	117	619	759
Uruguay	—	1	—	5	6
Argentine Republic	—	58	7	153	218
Other parts	—	1	1	2	4
Total export for 1899	—	**31,921**	**6,914**	**11,047**	**49,882**
Total for preceding Year	2	26,663	10,222	13,579	50,464

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TABLE 162.

EXPORTS of FOREIGN COPPER and COPPER ORE from the UNITED KINGDOM in the Year 1899 and preceding Year. (Return by Board of Customs.)

PORTS WHENCE EXPORTED.	Ore.	Regulus.	Old, fit only to be re-manufactured.	Unwrought, and Part Wrought.	Manufactured Copper. Value.
	Tons.	Tons.	Tons.	Tons.	£
London	238	1,027	58	17,331	32,300
Liverpool	962	220	12	5,333	1,127
Bristol	1	—	50	—	—
Folkestone	—	—	—	—	—
Harwich	—	—	—	1	20
Hull	—	—	19	370	12
Manchester	—	—	—	—	—
Shields, South	—	—	—	—	1,320
Southampton	—	—	5	942	1,208
Swansea	100	—	—	—	—
Glasgow	—	—	—	—	21
Grangemouth	—	—	—	—	—
Leith	—	—	—	—	—
Belfast	—	—	—	—	—
Dublin	—	—	—	—	—
Total export for 1899	**1,301**	**1,247**	**144**	**23,977**	**36,008**
Total for preceding year	348	194	135	13,113	85,195
COUNTRIES TO WHICH EXPORTED:	Tons.	Tons.	Tons.	Tons.	£
Russia:					
Northern Ports	—	—	—	912	12
Southern Ports	—	—	—	—	—
Sweden	—	—	—	75	—
Germany	126	958	118	5,641	26,973
Holland	127	—	4	1,712	60
Belgium	100	—	—	270	3,564
France	1	—	14	180	664
Spain	—	—	—	5	—
Italy	107	—	8	322	—
Austrian Territories	—	—	—	77	—
Greece	—	—	—	—	1,327
Turkey	—	—	—	—	250
British South Africa	—	—	—	—	664
East Coast Africa: Portuguese	—	—	—	—	71
Arabia, Muscat	—	—	—	—	—
British East Indies	—	—	—	10	264
Java	—	—	—	—	45
China	—	—	—	85	296
Australasia	—	—	—	—	869
British West India Islands	—	—	—	—	9
Islands in the Pacific	—	—	—	—	—
United States of America on the Atlantic	740	289	—	14,645	391
Mexico	—	—	—	—	80
Brazil	—	—	—	2	4
Argentine Republic	—	—	—	1	—
Other parts	100	—	—	40	465
Total export for 1899	**1,301**	**1,247**	**144**	**23,977**	**36,008**
Total for preceding year	348	194	135	13,113	85,195

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TABLE 163.

IMPORTS of COLONIAL and FOREIGN COPPER and COPPER ORE into the UNITED KINGDOM in the Year 1899 and preceding Year. (Return by Board of Customs.)

PORTS INTO WHICH IMPORTED.	Ore.	Regulus.	Old, fit only to be re-manufactured.	Unwrought and Partly Wrought.	Manufactured Copper: Value.
	Tons.	Tons.	Tons.	Tons.	£
London (including Queenborough)	3,404	4,634	2,238	33,832	162,425
Liverpool	33,324	18,624	2,119	18,361	224,405
Boston	—	—	—	—	236
Bristol	62	1,270	107	431	4,072
Cardiff	281	1,523	—	8	14
Dover	—	—	—	—	204
Folkestone	—	—	—	—	814
Gloucester	—	—	23	13	—
Goole	—	243	11	58	3,283
Grimsby	—	1	92	77	3,951
Hartlepool	—	—	—	—	30
Harwich	—	—	32	—	18,379
Hull...	142	2	597	427	5,945
Llanelly	230	—	—	—	—
Lynn	—	—	—	—	22
Manchester...	6,878	9	3	2,136	21,648
Middlesbrough	—	—	—	1	75
Newcastle	1,488	2,772	66	1	1,264
Newhaven	—	—	—	—	8,561
Newport	68	—	—	—	—
Shields, North	37	3,600	12	—	—
„ South	2	—	123	—	—
Southampton	—	—	149	30	206,012
Sunderland...	—	—	1	—	—
Swansea	79,286	48,880	569	4,169	855
Weymouth...	—	—	5	—	11
Leith	—	—	5	—	532
Glasgow	—	621	82	5	13,752
Grangemouth	—	—	—	—	4,495
Dublin	—	—	—	1	140
Belfast	—	—	—	—	40
Cork	—	—	—	—	595
Total imports for 1899 (exclusive of Cupreous Pyrites)	**125,202**	**82,179**	**6,234**	**59,550**	**681,760**
Total for preceding year	89,706	75,001	4,042	68,915	532,480
COUNTRIES WHENCE IMPORTED.	Tons.	Tons.	Tons.	Tons.	£
Sweden	64	120	269	77	1,803
Norway	3,683	—	259	5	1,043
Denmark	—	—	116	—	65
Germany	1,357	7,080	1,677	828	31,233
Holland	29	181	614	156	100,475
Belgium	143	247	147	143	8,715
France	469	241	802	1,926	306,183
Portugal	2,718	3,770	101	4	216
Spain	7,073	45,190	5	—	—
Italy	748	—	307	—	1,795
Austrian Territories	83	—	44	18	13
Greece	67	69	1	2	—
Turkey	10	2	301	353	9
Egypt	48	—	30	—	1,145
Algeria	—	842	—	—	—
British Possessions in South Africa	17,021	5,679	52	13	58
British East Indies	1,116	—	21	962	1,985
Japan	27	—	—	5,906	73
Australasia:					
West Australia	856	—	—	—	—
South Australia	7,294	260	1	469	—
Victoria	1,426	—	—	4,730	—
New South Wales	490	3,447	—	10,739	—
Queensland	22	423	—	—	—
New Zealand	—	—	17	—	—
Tasmania	—	—	—	—	—
Canada	36	—	41	2	30
Newfoundland	42,001	13	28	—	135
United States of America	550	5,479	925	21,307	226,355
Mexico	—	2,000	15	500	—
British West India Islands	—	—	98	—	—

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Imports of Colonial and Foreign Copper and Copper Ore into the United Kingdom—*continued.*

COUNTRIES WHENCE IMPORTED.	Ore.	Regulus.	Old, fit only to be re-manufactured.	Unwrought and Partly Wrought.	Manufactured Copper. Value.
	Tons.	Tons.	Tons.	Tons.	£
British Guiana	—	—	63	—	—
Republic of Colombia	25	—	8	—	25
Peru	1,846	2,961	15	29	—
Chili	35,433	4,086	84	11,325	—
Brazil	—	—	105	4	—
Argentine Republic	512	89	—	25	—
Other parts	55	—	88	27	311
Total imports for 1899 (exclusive of Cupreous Pyrites) ...	**125,202**	**82,179**	**6,234**	**59,550**	**681,760**
Total for preceding Year	89,706	75,001	4,042	68,915	532,480

TABLE 164.

SUMMARY of QUANTITIES of COPPER ORES and REGULUS SMELTED or TREATED in the UNITED KINGDOM, and of COPPER obtainable therefrom in 1899 and the preceding Year.

Copper Ores, &c.	1898.		1899.	
	Quantities.	Amount of Copper obtainable by Smelting.	Quantities.	Amount of Copper obtainable by Smelting.
	Tons.	Tons.	Tons.	Tons.
Copper ores and Precipitate from mines in the United Kingdom.	9,131	640	8,319	637
Colonial and Foreign ores (exclusive of Cupreous Pyrites) imported.	89,706	8,075	125,202	11,272
Copper Precipitate and Regulus imported	75,001	31,500	82,179	34,515
Burnt ore from imported Cupreous Pyrites (p. 224)	374,582	13,483	372,716	13,416
Total	548,420	53,698	**588,416**	**59,840**

LIST of COPPER SMELTERS and EXTRACTORS in the UNITED KINGDOM.

Owner of Smelting or Extraction Works.	Situation of Works.	Postal Address.
ANGLESEY:		
Mona & Parys Mines, Ltd.	Amlwch	Amlwch, R.S.O., Anglesey.
Henry Hills & Son	Amlwch	Amlwch, R.S.O., Anglesey.
CARMARTHENSHIRE:		
Elliott's Metal Co., Ltd. (Copper and Silver Smelters).	Burry Port ...	Pembrey Copper Works, Burry Port, R.S.O.
Nevill, Druce, & Co.	Llanelly	Llanelly Copper Works, Llanelly. London Office, 4, Corbet Court, Gracechurch Street, London. E.C.
CHESHIRE:		
Logan & Co.	Birkenhead ...	Dock Copper Wharf, Birkenhead.

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List of Copper Smelters and Extractors in the United Kingdom—*continued.*

Owner of Smelting or Extraction Works.	Situation of Works.	Postal Address.
DURHAM:		
Bede Metal and Chemical Co., Ltd. ...	Hebburn... ...	Hebburn-on-Tyne.
Tharsis Sulphur and Copper Co., Ltd. (Wet process).	Hebburn... ...	Head Office, 136, West George Street, Glasgow.
GLAMORGANSHIRE:		
Cape Copper Co., Ltd.	Briton Ferry ...	Briton Ferry Copper Works, Briton Ferry.
Charles Lambert & Co.	Port Tennant, Swansea.	Port Tennant Copper Works, Swansea.
Rio Tinto Co., Ltd.	Cwmavon ...	Cwmavon, Port Talbot. London Office, 30, St. Swithin's Lane, E.C.
Tharsis Sulphur and Copper Co., Ltd.	Cardiff	Head Office, 136, West George Street, Glasgow.
Vivian and Sons	Swansea	Hafod Copper Works, Swansea.
Ditto	Port Talbot ...	Margam Copper Works, Port Talbot.
Williams, Foster, & Co., and Pascoe, Grenfell, & Sons, Ltd.	Swansea	Morfa Copper Works, and Middle Bank Copper Works, Swansea. London Office, Leadenhall Buildings, Whittington Avenue, E.C.
Llansamlet Smelting Works Co. ...	Six Pits Junction, Swansea.	Swansea.
GLOUCESTERSHIRE:		
Pass, C., & Son, Ltd.	Bristol	Bedminster Smelting Works, Bristol.
LANCASHIRE:		
Bolton, Thos., & Sons	Widnes	Widnes.
Bibby, John, Sons, & Co.	Garston and St. Helen's.	Garston, near Liverpool
Broughton Copper Co., Ltd.	Near Widnes ...	Broughton Copper Works, Manchester.
Electro Chemical Co., Ltd.	St. Helen's ...	Parr, St. Helen's.
Harrison, Blair & Co., Ltd.	Bolton	Chemical Works, Farnworth, near Bolton.
Liverpool Silver and Copper Co., Ltd.	Widnes	West Bank, Widnes.
McKechnie Brothers	Widnes	Widnes.
United Alkali Co., Ltd. (Smelting).	St. Helen's ...	St. Helen's.
United Alkali Co., Ltd. (Wet process).	St. Helen's, Widnes, Runcorn, and Weston.	St. Helen's.
The St. Helen's Copper Co., Ltd. ...	St. Helen's ...	St. Helen's.
Newton, Keates, and Bolton	St. Helen's ...	4, Whitworth Street, London Road, Manchester.
NORTHUMBERLAND:		
Henry Hills and Son	Walker	Anglesey Copper Works, Walker, Newcastle-on-Tyne.
Tharsis Sulphur and Copper Co., Ltd.	Willington Quay	Head Office, 136, West George Street, Glasgow.
NOTTINGHAMSHIRE:		
Morris & Co. (Wet process)	Stockwith-on-Trent.	Morris & Co., 12, Priory Place, Doncaster.
WARWICKSHIRE:		
Wilkes, John, Sons, and Mapplebeck, Ltd.	Birmingham ...	Abberley Street, Birmingham.
WORCESTERSHIRE:		
Elliott's Metal Co., Ltd....	Selly Oak, near Birmingham.	Offices, Selly Oak Works, near Birmingham, and 83, Colmore Row, Birmingham.
Tharsis Sulphur and Copper Co., Ltd.	Oldbury, near Birmingham.	Head Office, 136, West George Street, Glasgow.
YORKSHIRE:		
English Electro-Metallurgical Co., Ltd.	Hunslet	Pontefract Road, Hunslet, Leeds.
Morris & Co.	Doncaster ...	12, Priory Place, Doncaster.
Nicholson, John, & Sons, Ltd. (Wet process).	Hunslet	Leeds.
Sheffield Smelting Co., Ltd.	Attercliffe, Sheffield.	1, Berry Street, Clerkenwell Road, E.C.
SCOTLAND:		
Birmingham Battery and Metal Co. ...	Glasgow	131, Hope Street, Glasgow.
Henderson, Wm., & Co., Ltd. (Extraction by the Wet process).	Irvine	Irvine.
Tharsis Sulphur and Copper Co., Ltd.	Glasgow	Head Office, 136, West George Street, Glasgow

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Coprolites. *See* PHOSPHATE OF LIME.

Ferro-Manganese. *See* IRON.

Fire Clay. *See* CLAY.

Flint. *See* CHERT.

Fluor Spar.

Derbyshire produces the variety of Fluor Spar known as "Blue John," used in making ornaments.

TABLE 165.

SUMMARY of OUTPUT from MINES and QUARRIES.

County.	Quantity obtained.			Total value.
	From Mines.	From Quarries.	Total.	
	Tons.	Tons.	Tons.	£
DERBY	633	50	683	803
DURHAM	100	—	100	38
Total for 1899	**733**	**50**	**783**	**841**
Total for preceding Year... ...	56	—	56	49

TABLE 166.

DETAILS of OUTPUT from MINES.

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mines.
ENGLAND.			
DERBYSHIRE:		Tons.	£
Blue John Caverns, Castleton... ...	A. Champion	633	791
Lower Rake	Samuel Smith		
Maiden Rake, Little Hucklow... ...	George Wilson		
White Rake, Eyam	Robins and Maltby		
DURHAM:			
Crawley	Weardale Iron and Coal Co., Ltd. ...	100	38

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TABLE 167.

ANNUAL OUTPUT and VALUE of FLUOR SPAR in the United Kingdom, from the Year 1874 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	—	—	1882	145	269	1891	141	187
1874	634	317	1883	90	253	1892	171	188
1875	359	188	1884	581	730	1893	215	161
1876	337	230	1885	423	491	1894	126	69
1877	220	37	1886	279	412	1895	36	54
1878	392	133	1887	283	385	1896	394	478
1879	1,265	422	1888	140	153	1897	297	397
1880	458	350	1889	297	411	1898	56	49
1881	373	254	1890	268	392	**1899**	**783**	**841**

Fuller's Earth. *See* CLAY.

Ganister. *See* SANDSTONE.

Gold Ore.

The output of gold from Merionethshire rose from 395 ozs. in 1898 to 3,327 last year. The 3,327 ozs. of bar gold were estimated to contain 2,849 ozs. of fine gold.

TABLE 168.

OUTPUT from MINES.

Name and Situation of Mine.	Owner.	Quantity.	Amount of Gold obtained.	Value of the Ore at the Mine (Estimated).
MERIONETHSHIRE:		Tons.	Ounces.	£
British Gold Fields, Gwynfyndd ...	British Gold Fields, Ltd. ...	1,789	371½	1,128
Cefn Coch, Dolgelly	W. Claude Johnson... ...	8	39	31
Moel Ispri, Llanelltyd	St. David's Mining Development Co., Ltd.	50	85	311
St. David's (formerly Clogau), Dolgelly.	St. David's Gold and Copper Mines, Ltd.	1,200	2,831½	8,700
Total for 1899		**3,047**	**3,327**	**10,170**
Total for the preceding Year		703½	395	1,158

The value of the 3,327 ozs. of bar gold obtained was £12,086.

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TABLE 169.

Annual Output and Value of GOLD ORE (Auriferous Quartz) in the United Kingdom, from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons	£		Tons.	£		Tons.	£
1873	Nil	—	1882	Nil	—	1891	14,117	12,200
1874	„	—	1883	$\frac{3}{10}$	100	1892	9,990	9,168
1875	32	100	1884	Nil	—	1893	4,489	7,657
1876	—	18	1885	„	—	1894	6,603	13,573
1877	Nil	—	1886	„	—	1895	13,266	16,584
1878	„	—	1887	$\frac{17}{10}$	209	1896	2,765	4,257
1879	$\frac{4}{10}$	—	1888	3,844	27,300	1897	4,517	6,282
1880	$\frac{3}{10}$	25	1889	6,226	10,746	1898	703½	1,158
1881	$\frac{1}{10}$	18	1890	575	434	**1899**	**3,047**	**10,170**

GOLD Extracted from FOREIGN CUPREOUS IRON PYRITES: 1,712 ounces.
See IRON PYRITES.

TABLE 170.

VALUE of the GOLD BULLION and SPECIE IMPORTED into, and EXPORTED from, the UNITED KINGDOM in 1899 and the preceding Year. (Return by Board of Customs.)

Year.	Imports.	Exports.
	£	£
1898	43,722,960	36,590,050
1899	**32,533,497**	**21,536,052**

TABLE 171.

QUANTITY and VALUE of GOLD ORE IMPORTED into the UNITED KINGDOM in 1899 and the preceding Year. (Return by Board of Customs.)

Ports into which Imported.	Quantity.	Value.
	Tons.	£
London	216	148,138
Liverpool	39	3,237
Hull	20	95
Manchester	—	28
Sotuhampton	15	373
Swansea	—	480
Total for 1899	**290**	**152,351**
Total for preceding Year	1,003	278,635

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Gravel and Sand.

The figures for Gravel and Sand must not be taken as representing the total output of these minerals, as they are so frequently dug from shallow pits less than 20 feet deep, which are not under the Quarries Act, and which consequently furnish no returns to the Inspectors of Mines.

TABLE 172.

COUNTY OUTPUT from MINES and QUARRIES.

County.	Quantity obtained			Total Value.
	From Mines.	From Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Bedford	—	78,420	78,420	4,243
Berks	—	18,866	18,866	1,349
Buckingham	—	7,000	7,000	710
Cambridge	—	2,520	2,520	252
Chester	—	26,785	26,785	2,106
Cornwall	—	1,825	1,825	221
Cumberland	—	12,686	12,686	681
Derby	1,000	29,218	30,218	3,050
Devon	—	7,050	7,050	416
Dorset	—	35,055	35,055	2,078
Durham	—	20,471	20,471	1,120
Essex	—	38,159	38,159	3,113
Gloucester	—	2,940	2,940	313
Hants	—	13,349	13,349	653
Hereford	—	1,335	1,335	138
Hertford	—	105,142	105,142	11,200
Kent	—	202,137	202,137	13,484
Lancaster	—	24,128	24,128	1,729
Leicester	—	7,500	7,500	562
Lincoln	—	4,774	4,774	386
Middlesex	—	13,902	13,902	1,817
Norfolk	—	84,474	84,474	5,435
Northampton	—	39,213	39,213	1,464
Northumberland	—	42,927	42,927	2,862
Nottingham	—	126,300	126,300	13,377
Oxford	—	2,467	2,467	247
Salop	—	9,740	9,740	718
Somerset	—	5,970	5,970	467
Stafford	—	175,878	175,878	11,553
Suffolk	—	3,791	3,791	222
Surrey	2,812	59,396	62,208	3,637
Sussex	—	18,630	18,630	780
Warwick	—	41,405	41,405	3,952
Wilts	—	6,289	6,289	537
Worcester	—	20,351	20,351	1,155
York	3,850	36,398	40,248	4,174
Total	7,662	1,326,491	1,334,153	100,201
WALES:				
Anglesey	—	300	300	30
Brecon	23 529	2,390	25,919	6,294
Cardigan	—	400	400	15
Carmarthen	—	4,858	4,858	633
Carnarvon	—	6,497	6,497	258
Denbigh	—	2,295	2,295	115
Flint	—	5,268	5,268	285
Glamorgan	—	2,037	2,037	255
Merioneth	—	36	36	2
Radnor	—	13	13	1
Total	23,529	24,094	47,623	7,888
SCOTLAND:				
Aberdeen	—	28,195	28,195	1,203
Ayr	—	106	106	3
Banff	—	1,316	1,316	56
Bute	—	120	120	7
Dumbarton	—	18,875	18,875	1,623
Edinburgh	—	5,902	5,902	480
Fife	—	6,430	6,430	467
Lanark	—	201,014	201,014	13,434
Linlithgow	—	11,797	11,797	590
Renfrew	—	5,400	5,400	420
Stirling	—	41,428	41,428	2,273
Total	—	320,583	320,583	20,56[illegible]

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OUTPUT from MINES and QUARRIES—*continued.*

County	Quantity obtained			Total Value.
	From Mines.	From Quarries.	Total.	
IRELAND:	Tons.	Tons.	Tons.	£
Armagh	—	6,100	6,100	738
Carlow	—	200	200	10
Clare	—	16	16	1
Cork	—	5,872	5,872	294
Down	—	1,800	1,800	85
Dublin	—	31,825	31,825	1,629
King's County	—	—	—	—
Longford	—	10,150	10,150	257
Louth	—	1,922	1,922	85
Meath	—	2,160	2,160	174
Monaghan	—	500	500	25
Queen's County	—	100	100	5
Tipperary	—	170	170	7
Tyrone	—	3,700	3,700	220
Waterford	—	600	600	42
Wicklow	—	940	940	29
Total	—	66,055	66,055	3,601
ISLE OF MAN	—	2,862	2,862	143
Total for 1899	**31,191**	**1,740,085**	**1,771,276**	**132,399**
Total for preceding Year	35,556	1,590,134	1,625,690	135,538

Gypsum.

The principal gypsum deposits worked in the United Kingdom are those of Cumberland, Nottinghamshire, and Staffordshire, where the mineral occurs in irregular seams and in spheroidal and lenticular masses in the Keuper division of the Trias.

The gypsum of Derbyshire and Westmoreland occurs in rocks of the same age, whilst the seam worked in Sussex is considered to belong to the Purbeck Beds.

TABLE 173.

SUMMARY of OUTPUT of GYPSUM from MINES and QUARRIES.

County.	Quantity obtained			Comparison with preceding Year.	Total value.
	From Mines.	From Quarries.	Total.		
	Tons.	Tons.	Tons.		£
Cumberland	26,451	17,407	43,858	+ 1,750	8,772
Derby	11,557	—	11,557	− 1,151	5,778
Nottingham	50,866	26,946	77,812	+ 3,145	34,856
Stafford	48,998	—	48,998	+ 9,872	18,000
Somerset	—	5,875	5,875	+ 865	1,469
Sussex	18,454	—	18,454	+ 2,245	6,229
Westmoreland	2,000	4,009	6,009	− 191	1,352
Total for 1899	**158,326**	**54,237**	**212,563**	**+16,535**	**76,456**
Total for preceding Year	134,195	61,833	196,028	+ 14,643	71,316

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TABLE 174.

Annual Output and Value of GYPSUM in the United Kingdom, from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	66,124	Not given	1882	101,872	58,145	1891	151,708	60,038
1874	61,113	„	1883	99,551	43,215	1892	147,540	58,227
1875	65,068	„	1884	109,922	45,441	1893	143,486	59,369
1876	61,741	18,571	1885	112,078	47,753	1894	153,450	66,355
1877	73,908	22,172	1886	118,848	44,462	1895	177,892	71,835
1878	74,908	22,472	1887	120,783	48,293	1896	193,311	74,538
1879	62,443	18,733	1888	130,082	58,998	1897	181,385	66,978
1880	75,452	25,150	1889	132,357	53,819	1898	196,028	71,316
1881	79,499	23,329	1890	140,293	57,991	**1899**	**212,563**	**76,456**

Igneous Rocks.

Under this head are grouped together various kinds of igneous rocks, such as granite, syenite, diorite, basalt, &c., principally used for making road metal and paving stones.

Leicestershire is by far the greatest producer of granitic rocks with its large quarries in Charnwood Forest. Aberdeenshire and Cornwall are both remarkable for their granite which is employed for building and monumental purposes.

Carnarvonshire contributes important supplies of diorite, quartz-porphyry, and augite-porphyry. Shropshire and Staffordshire have extensive basalt quarries at Clee Hill and Rowley Regis respectively.

Warwickshire has a large output of diorite from quarries at Atherston and Nuneaton.

TABLE 175.

COUNTY OUTPUT from MINES and QUARRIES.

County.	Quantity.			Total Value.
	From Mines.	From Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Cornwall	—	222,614	222,614	97,008
Cumberland	—	103,923	103,923	16,735
Devon	—	48,651	48,651	6,053
Durham	2,701	70,943	73,644	17,983
Lancaster	—	8,235	8,235	1,841
Leicester	—	1,099,386	1,099,386	203,281
Northumberland	—	108,682	108,682	20,070
Salop	—	272,037	272,037	31,933
Stafford	—	165,529	165,529	37,207
Warwick	—	139,352	139,352	26,197
Westmoreland	—	66,198	66,198	15,648
Worcester	—	16,045	16,045	1,985
York	81,632	99,168	180,800	38,328
Total	84,333	2,420,763	2,505,096	514,269
WALES:				
Anglesey	—	450	450	68
Carnarvon	—	413,109	413,109	122,420
Denbigh	12,128	16,712	28,840	5,477
Merioneth	—	15,315	15,315	3,215
Montgomery	—	4,823	4,823	448
Pembroke	—	246,330	246,330	6,476
Radnor	—	36,560	36,560	13,083
Total	12,128	733,299	745,427	151,187

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COUNTY OUTPUT from MINES and QUARRIES—*continued.*

County.	Quantity.			Total Value.
	From Mines.	From Quarries.	Total.	
SCOTLAND:	Tons.	Tons.	Tons.	£
Aberdeen	—	335,075	335,075	176,461
Argyll	—	66,128	66,128	19,156
Ayr	—	54,231	54,231	7,470
Banff	—	7,438	7,438	899
Berwick	—	3,515	3,515	258
Bute	—	5,579	5,579	868
Clackmannan	—	5,294	5,294	629
Dumbarton	—	81,039	81,039	21,248
Edinburgh	—	109,756	109,756	14,396
Elgin	—	4,300	4,300	287
Fife	—	97,355	97,355	26,842
Forfar	—	35,129	35,129	3,662
Haddington	—	25,746	25,746	2,044
Kincardine	—	10,873	10,873	6,021
Kinross	—	7,660	7,660	1,171
Kirkcudbright	—	53,633	53,633	28,429
Lanark	—	144,441	144,441	29,541
Linlithgow	—	20,330	20,330	4,029
Nairn	—	36	36	9
Peebles	—	5,469	5,469	424
Perth	—	55,009	55,009	8,548
Renfrew	—	46,660	46,660	5,972
Roxburgh	—	11,062	11,062	728
Selkirk	—	1,128	1,128	75
Stirling	—	53,445	53,445	14,749
Wigtown	—	960	960	138
Total	—	1,241,291	1,241,291	374,054
IRELAND:				
Antrim	—	36,335	36,335	3,217
Armagh	—	6,810	6,810	4,568
Carlow	—	350	350	120
Clare	—	500	500	32
Donegal	—	9,130	9,130	1,067
Down	—	77,369	77,369	26,060
Dublin	—	5,600	5,600	3,812
Limerick	—	200	200	10
Londonderry	—	26,841	26,841	2,424
Louth	—	1,920	1,920	95
Meath	—	20	20	2
Queen's County	—	4,060	4,060	152
Tyrone	—	6,800	6,800	496
Wexford	—	1,500	1,500	75
Wicklow	—	30,488	30,488	11,678
Total	—	207,923	207,923	53,808
ISLE OF MAN	—	10,188	10,188	2,445
Total for 1899	**96,461**	**4,613,464**	**4,709,925**	**1,095,763**
Total for preceding Year	99,440	4,378,868	4,478,308	1,042,000

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Iron Ore.

The principal iron-producing districts at the present time are Cleveland or North Yorkshire, yielding over five and a half million tons annually; Lincolnshire, Northamptonshire and Leicestershire together, yielding nearly four and a half million tons; and Cumberland and North Lancashire, with an output of a little below two million tons.

The Cleveland ore occurs in the form of a bed about ten feet thick in the Middle Lias, and is worked by true underground mining, it contains on an average about 30 per cent. of metal.

The bed of brown iron ore in Lincolnshire, Northamptonshire and Leicestershire forms part of the Inferior Oolite, and the workings are mainly open. The percentage of iron on an average is about 33. In Cumberland and Lancashire the ore is a red hæmatite which occurs in the form of huge irregular masses in the Carboniferous Limestone, this is the richest ore of the country yielding from 50 to 60 per cent. of metal.

Table 177 shows that the supply of rich ore is diminishing, and that we are becoming more and more dependent upon the poorer deposits of the Secondary rocks. These deposits are usually worked open and many of the quarries are less than 20 feet deep; the owners are consequently under no obligation to supply returns, but they have given the necessary information voluntarily, and so enabled the Home Office to compile complete statistics of the output of iron ore.

The ore worked in Scotland is chiefly Black Band Ironstone.

TABLE 176.

GENERAL SUMMARY of the OUTPUT of IRON ORE from MINES and QUARRIES in the UNITED KINGDOM, and the QUANTITY and VALUE of PIG IRON obtainable therefrom.

	Iron Ore.			Pig Iron obtainable.	
	Quantity.	Comparison with preceding Year.	Value.	Quantity.	Value.
	Tons.	Tons.	£	Tons.	£
From MINES	9,731,664	— 336,482	3,314,175	3,343,671	17,034,874
From QUARRIES	4,729,666	+ 620,874	581,310	1,570,175	
Total for 1899	**14,461,330**	**+ 284,392**	**3,895,485**	**4,913,846**	**17,034,874**
Total for preceding Year ...	14,176,938	+ 389,060	3,406,628	4,850,508	12,740,043

The principal facts relating to the output of iron ore in the Kingdom, as set forth in Tables 177 and 178, may be summed up in the following words:—The Cleveland district of Yorkshire produces about two-fifths of the total quantity, Leicestershire, Lincolnshire, and Northamptonshire together nearly one-third, Cumberland and Lancashire together rather more than one-eighth, but in this last case the superior quality of the ore must not be forgotten. Most of the Staffordshire ore comes from mines which likewise produced coal, and the same remark applies to the ore from Scotland.

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TABLE 177.

SUMMARY of OUTPUT of IRON ORE in each IRON-PRODUCING DISTRICT during the Year 1899.

Districts or Counties.	From Iron Mines.	From Coal Mines.*	From Quarries.†	Total.	Comparison with preceding Year.	Percentage of the Total Output.
	Tons.	Tons.	Tons.	Tons.	Tons.	
1. Scotland	328,167	515,418	—	843,585	+ 19,366	5·8
2. Cumberland and Lancashire ...	1,808,674	—	—	1,808,674	— 192,517	12·5
3. Yorkshire, N. Riding (Cleveland).	5,612,742	—	—	5,612,742	— 117,671	38·8
4. Staffordshire	70,337	994,887	4,534	1,069,758	— 41,954	7·4
5. Lincolnshire	139,850	—	1,954,480	2,094,330	+ 245,926	14·5
6. Northamptonshire	—	—	1,779,710	1,779,710	+ 373,560	12·3
7. Other counties...	57,730	101,597	990,942	1,150,269	+ 8,691	8·0
8. Ireland	102,262	—	—	102,262	— 11,009	·7
Total	**8,119,762**	**1,611,902**	**4,729,666**	**14,461,330**	+ 284,392	**100·0**

* *i.e.*, Mines producing coal and iron ore.

† Including all open workings for iron ore, whether more or less than 20 feet deep.

Both lines in Figure 12 representing the output and import of iron ore respectively show a rise in 1899.

FIG. 12.

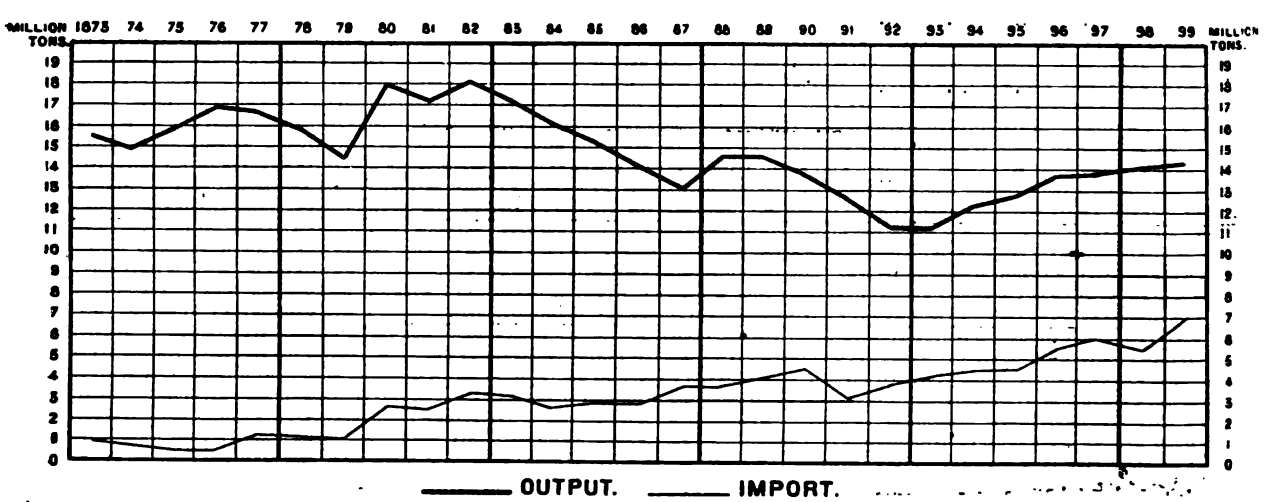

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TABLE 178.

COUNTY OUTPUT of IRON ORE.

County	From Iron Mines	From Coal Mines.*	From Quarries.†	Total.	Percentage of the Total Amount produced in the United Kingdom.
ENGLAND:	Tons.	Tons.	Tons.	Tons.	
Cumberland	1,137,750	—	—	1,137,750	7·9
Derby	—	3,526	—	3,526	·0
Devon	780	—	—	780	·0
Durham	16,960	—	—	16,960	·1
Gloucester	26,101	—	—	26,101	·2
Lancaster	670,924	—	—	670,924	4·7
Leicester	—	—	677,667	677,667	4·7
Lincoln	139,850	—	1,954,480	2,094,330	14·5
Monmouth	—	12,794	—	12,794	·1
Northampton	—	—	1,779,710	1,779,710	12·3
Nottingham	—	—	20	20	·0
Oxford	—	—	166,163	166,163	1·1
Rutland	—	—	45,378	45,378	·3
Salop	12,870	15,641	—	28,511	·2
Somerset	—	—	2,649	2,649	·0
Stafford	70,337	994,887	4,534	1,069,758	7·4
Warwick	—	357	30,140	30,497	·2
Wilts	—	—	67,603	67,603	·5
Worcester	—	2,847	1,034	3,881	·0
York	5,612,742	59,136	288	5,672,166	39 2
Total	7,688,314	1,089,188	4,729,666	13,507,168	93·4
WALES:					
Brecon	—	379	—	379	·1
Denbigh	—	100	—	100	
Flint	1,019	—	—	1,019	
Glamorgan	—	6,817	—	6,817	
Total	1,019	7,296	—	8,315	·1
SCOTLAND:					
Ayr	180,065	174,268	—	354,333	2 4
Dumbarton	—	38,722	—	38,722	·3
Edinburgh	2,087	42,581	—	44,668	·3
Fife	—	25,269	—	25,269	·2
Lanark	—	169,528	—	169,528	1·2
Linlithgow	—	45,298	—	45,298	·3
Renfrew	146,015	16,740	—	162,755	1·1
Stirling	—	3,012	—	3,012	·0
Total	328,167	515,418	—	843,585	5·8
IRELAND:					
Antrim	102,262	—	—	102,262	·7
Total for 1899	**8,119,762**	**1,611,902**	**4,729,666**	**14,461,330**	**100·0**
Total for preceding Year ...	8,410,507	1,657,639	4,108,792	14,176,938	100·0

* *i.e.*, Mines producing coal and iron ore.

† Including all open workings for iron ore whether more or less than 20 feet deep.

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TABLE 179.

COUNTY OUTPUT of IRON ORE (chiefly ARGILLACEOUS CARBONATE).

From MINES under the COAL MINES REGULATION ACT.

(Particulars of Individual Returns not allowed under the Statute.)

County.	Quantity.	Total Quantity.*	Average Price per Ton.	Total Value at the Mine.	Amount of Metal obtainable.
ENGLAND:	Tons.	Tons.	s. d.	£	Tons.
Derby	—	3,526	7 0	1,234	
Lincoln	—	139,850	3 11	27,387	
Monmouth	—	12,794	10 0	6,397	
Salop	—	28,511	11 6	16,394	
Stafford (North)	1,016,398	1,065,224	6 6	330,329	2,077,496
Do. (South)	48,826		10 10	26,447	
Warwick	—	357	8 6	152	
Worcester	—	2,847	10 10	1,542	
York (East and West Ridings)	59,136	5,671,878	11 0	32,525	
Do. (North Riding)	5,612,742		4 2	1,169,321	
Total	—	6,924,987	4 8	1,611,728	2,077,496
WALES:					
Brecon (East)	227	379	8 0	92	2,189
Do. (West)	152		9 0	68	
Denbigh	—	100	10 0	50	
Glamorgan (West)	—	6,817	9 0	3,068	
Total	—	7,296	9 0	3,278	2,189
SCOTLAND:					
Ayr	—	354,333	10 0	177,166	253,075
Dumbarton	—	38,722	10 6	20,329	
Edinburgh	—	44,668	7 6	16,750	
Fife	—	25,269	7 6	9,476	
Lanark (East)	22,182	169,528	7 6	8,318	
Do. (West)	147,346		11 0	81,040	
Linlithgow	—	45,298	7 6	16,987	
Renfrew	—	162,755	9 6	77,309	
Stirling (East)	—	3,012	7 6	1,129	
Total	—	843,585	9 8	408,504	253,075
IRELAND	—	—	—	—	—
Total Production and Value of Iron Ore from Mines under the Coal Mines Regulation Act in the United Kingdom for 1899.		7,775,868	5 2	2,023,510	2,332,760
Total for preceding Year		7,901,046	4 4	1,700,388	2,370,313

* It is estimated that on an average these ores will produce 30 per cent. of metal.

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TABLE 180.

COUNTY OUTPUT of IRON ORE—*continued.*

From MINES under the METALLIFEROUS MINES REGULATION ACT.

SUMMARY.

COUNTY.	IRON ORE.			PIG IRON OBTAINABLE.
	Quantity.	Value.	Average percentage of Iron.	Quantity.
ENGLAND:	Tons.	£		Tons.
Cumberland	1,137,750	833,879	54	614,385
Devon	780	1,655	49	382
Durham	16,960	6,360	30	5,088
Gloucester	26,101	12,516	45	11,745
Lancaster	670,924	419,909	51	342,171
Total	1,852,515	1,274,319	—	973,771
WALES:				
Flint	1,019	331	32	326
IRELAND:				
ULSTER (Co. Antrim)	102,262	16,015	36	36,814
Total from Mines under the Metalliferous Mines Act ...	**1,955,796**	**1,290,665**	—	**1,010,911**
Total for preceding Year	2,167,100	1,218,401	—	1,119,452

TABLE 181.

DETAILS of OUTPUT from MINES under the METALLIFEROUS MINES REGULATION ACT.

Name of Mine.	Where situated.	Owner.	Quantity.	Average percentage of Iron obtainable.	Value of the Ore at the Mines.
ENGLAND.					
CUMBERLAND:			Tons.		£
(*Red hæmatite.*)					
Bigrigg and Crowgarth.	Bigrigg and Cleator Moor.	Lord Leconfield...	42,929		
Cleator and Margaret	Cleator and Winder	Cleator Iron Ore Co.	72,456		
Crossfield	Cleator Moor ...	Crossfield Mining Co.	13,528		
Eskett Park	Eskett	Eskett Iron Ore Co., Ltd. ...	2,079		
Frizington Parks, Park House, &c.	Frizington and Bigrigg.	Chas. Cammell & Co., Ltd. ...	34,698		
Gillfoot Park ...	Egremont... ...	Gillfoot Park Mining Co. ...	62,686	54	833,879*
Glebe, Longlands, Syke House, &c.	Cleator and Bigrigg.	S. and J. Lindow	63,443		
High House	Frizington ...	Fletcher's High House Mining Co.	9,142		
Hodbarrow	Millom	Hodbarrow Mining Co., Ltd....	435,400		
Holebeck	Frizington ...	Dalmellington Iron Co., Ltd....	20,219		
Jacktrees	Cleator Moor ...	Carron Co.	15,735		
Kelton	Kelton	William Baird & Co., Ltd. ...	16,725		
Lonsdale	Frizington ...	Lonsdale Mining Co., Ltd. ...	12,787		

* Value for the whole of the County.

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DETAILS of OUTPUT—*continued.*

Name of Mine.	Where situated.	Owner.	Quantity.	Average percentage of Iron obtainable.	Value of the Ore at the Mines.
ENGLAND—*cont.*					
CUMBERLAND—*cont.*			Tons.		£
(*Red hæmatite*)—cont.					
Montreal	Cleator Moor ...	John Stirling	54,912		
Moor Row	Moor Row ...	Exors. T. H. Dalzell	7,830		
Moss Bay	Woodend	Moss Bay Iron & Steel Co., Ltd.	24,692		
New Parkside ...	Frizington ...	New Parkside Mining Co., Ltd.	5,177		
Pallaflat	Bigrigg	Pallaflat Iron Ore Co., Ltd. ...	30,742		
Parkside	Frizington and Winder.	Parkside Mining Co.	49,404		
Postlethwaite's Eskett	Eskett	Postlethwaite's Eskett Mining Co., Ltd.	6,051	54	833,879
Postlethwaite's Moor Row.	Moor Row ...	Miles Postlethwaite	18,334		
Southam	Bigrigg	Southam Hematite Co., Ltd. ...	10,720		
Woodend	Woodend	James Bain & Co.	35,582		
Wyndham	Egremont and Salter.	Wyndham Mining Co., Ltd. ...	92,479		
Total			1,137,750	54	833,879
DEVONSHIRE:					
Brixham	Brixham	G. H. Bayldon	600		
Hawkmoor ... ... "Shining Ore."	Bovey Tracey ...	Otto Schmidt & Co.	40	49	1,655
Plumley	North Combe ...	P. J. Dick	50		
Shapter and Shortamoor.	Bovey Tracey ...	G. M. Slatter	90		
Total			780	49	1,655
DURHAM:					
(*Brown iron ore.*)					
Carrick or Craig's Level.	Weardale	Weardale Iron and Coal Co., Ltd.	16,960	30	6,360
GLOUCESTERSHIRE:					
(*Brown iron ore.*)					
FOREST OF DEAN.					
Bow Pit	Coleford	F. T. Burgess, Ltd	82		
Box Bush (New) ...	Coleford	Box Bush Iron Ore Co., Ltd....	21		
Bream Grove and Tufts Level.	Lydney	Park Iron Ore and Coal Co., Ltd.	4,733		
Bream Tufts ...	Bream	Thomas Morse	103		
Buckshaft, Perseverance and Shakemantle.	Cinderford ...	Henry Crawshay & Co., Ltd. ...	13,717		
Cross Ways	Wick	Burgess & Co.	—		
Crows Nest	Newland	R. Watkins	175	45	12,516
Forget-me-not and Red Hill.	Bream and Lydney	Thomas Morse	498		
Ham	Coleford	Forest Hæmatite Co.	—		
Highmeadow ...	Bream	Highmeadow Iron Co., Ltd. ...	880		
Lydbrook and Limekiln.	Lydbrook	Lydbrook Iron Mines Co. ...	135		
New Dunn and Sling	Coleford	R. Watkins	4,685		
Oakwood Level ...	Bream	Oakwood Iron Co.	936		
Small Hole	Lydney	Thomas Gaulder	136		
Total			[c]26,101	45	12,516

[c] Of this quantity the mines in the Crown property produced 23,974 tons (Gaveller's Return).

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DETAILS of OUTPUT—*continued.*

Name of Mine.	Where situated.	Owner.	Quantity.	Average percentage of Iron obtainable.	Value of the Ore at the Mines.
ENGLAND—*cont.*					
LANCASHIRE:					
(*Red hæmatite.*)					
(Detached part of North Lancashire.)			Tons.		£
Askam and Mouzell...	Askam and Dalton	Millom and Askam Hematite Iron Co., Ltd.	70,356	51	419,909
Chapman Lot ...	Askdam	S. Wakefield	1,206		
Elliscales	Dalton	Elliscales Mining Co., Ltd. ...	23,262		
Lindal Moor, &c. ...	Lindal	Harrison, Ainslie, & Co., Ltd.	169,182		
Park, Stank, &c. ...	Barrow and Dalton	Barrow Hæmatite Steel Co., Ltd.	263,864		
Roanhead, &c. ...	Askam and Dalton	Kennedy Brothers	143,054		
Total	... ...		670,924	51	419,909
WALES:					
FLINTSHIRE.					
Bodfari	Bodfari	Thomas Gee	1,019	32	331
IRELAND:					
ULSTER (Co. Antrim).					
(*Aluminous hæmatite.*)					
Barard	Ballymena	Antrim Iron Ore Co., Ltd. ...	102,262	36	16,015
Clonetrace	Ditto				
Glenarm	Glenarm				
Parkmore	Ballymena				
Rathkenny	Ditto				
Cargan ...	Ditto ...	Crommelin Mining Co., Ltd. ...			
Crommelin ...					
Evishacrow ...					
Glenravel	Ditto ...	John Fisher & Co.			
Evishnably	Glenravel	Mountcashel Iron Ore Co. ...			
Total	... ...		102,262	36	16,015

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TABLE 182.

COUNTY OUTPUT of IRON ORE from QUARRIES.

County.	Quantity obtained from Quarries.			Total Value.	Average percentage of Iron obtainable.	Quantity of Pig Iron obtainable.
	Over 20 feet deep.	Under 20 feet deep.	Total.			
ENGLAND:	Tons.	Tons.	Tons.	£		Tons.
Leicester ...	328,980	348,687	677,667	73,419	34	230,407
Lincoln	1,530,084	424,396	1,954,480	253,133	30	586,344
Northampton ...	1,443,423	336,287	1,779,710	184,390	36	640,696
Nottingham ...	20	—	20	5	—	6
Oxford ... ... / Rutland	—	211,541	211,541	21,154	34	71,924
Somerset... ...	2,649	—	2,649	795	34	901
Stafford	4,534	—	4,534	1,372	34	1,542
Warwick... ...	30,140	—	30,140	3,014	36	10,850
Wilts	67,603	—	67,603	43,942	40	27,041
Worcester ...	1,034	—	1,034	52	36	372
York	288	—	288	34	32	92
Total for 1899	**3,408,755**	**1,320,911**	**4,729,666**	**581,310**	—	**1,570,175**
Total for preceding Year.	2,759,490	1,349,302	4,108,792	487,839	—	1,360,743

TABLE 183.

Annual Output and Value of IRON ORE in the United Kingdom from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	15,577,499	7,573,676	1882	18,031,957	5,779,285	1891	12,777,689	3,355,860
1874	14,844,936	7,318,169	1883	17,383,046	5,122,381	1892	11,312,675	2,970,632
1875	15,821,060	5,975,410	1884	16,137,887	4,463,275	1893	11,203,476	2,827,947
1876	16,841,584	6,825,705	1885	15,417,982	3,969,719	1894	12,367,308	3,190,647
1877	16,692,802	6,746,668	1886	14,110,013	3,513,515	1895	12,615,414	2,865,709
1878	15,726,370	5,609,507	1887	13,098,341	3,235,355	1896	13,700,764	3,150,424
1879	14,379,735	4,962,435	1888	14,590,713	3,501,317	1897	13,787,878	3,217,795
1880	18,026,050	6,585,806	1889	14,546,105	3,848,268	1898	14,176,938	3,406,628
1881	17,446,065	6,201,068	1890	13,780,767	3,926,445	**1899**	**14,461,330**	**3,895,485**

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TABLE 184.

IMPORTS of IRON ORE into the UNITED KINGDOM in the Year 1899 and the preceding Year. (Return by Board of Customs.)

Ports into which Imported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
ENGLAND AND WALES:	Tons.	£	Tons.	£
Barrow	202,704	149,526	449,704	349,447
Boston	4,685	3,280	5,378	3,766
Bridgwater	196	125	145	145
Bristol	523	552	1,299	1,182
Cardiff	477,664	322,424	831,541	589,094
Chester	37,926	35,171	50,526	49,932
Fleetwood	3,225	4,840	—	—
Gloucester	—	—	1,424	1,220
Goole	1,320	1,089	6,270	8,063
Grimsby	4,940	4,259	4,705	3,529
Hartlepool	178,641	124,953	151,231	110,942
Hull	5,688	4,954	1,666	1,984
Lancaster	31,955	23,170	38,671	30,899
Liverpool	37,155	37,653	46,044	56,258
London	13,589	35,774	18,962	50,202
Manchester	7,668	4,555	6,302	5,411
Maryport	356,898	276,326	522,869	386,517
Middlesbrough	1,102,771	811,159	1,333,545	1,045,467
Newcastle	325,378	239,966	299,701	223,256
Newport	246,691	174,924	619,024	454,562
Preston	890	445	1,919	1,180
Shields, North	—	—	12	19
Shields, South	351,886	252,562	377,411	276,635
Stockton	252,283	185,529	206,139	162,094
Sunderland	67,220	39,899	87,217	55,339
Swansea	185,148	129,889	251,148	187,866
Whitehaven	9,233	6,784	66,152	48,812
Workington	118,230	82,480	218,524	155,196
SCOTLAND:				
Ardrossan	486,983	364,004	401,521	306,917
Ayr	151,984	113,926	112,215	84,055
Bo'ness	41,051	29,914	55,769	41,651
Dundee	—	—	151	105
Glasgow	654,931	500,375	730,225	576,637
Grangemouth	34,186	24,922	42,445	30,605
Granton	500	375	250	200
Greenock	3,754	2,766	12,190	9,041
Leith	—	—	78	259
Troon	70,500	46,078	102,205	66,431
Total	5,468,396	4,034,648	**7,054,578**	**5,374,918**

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IMPORTS of IRON ORE—*continued.*

Countries whence Imported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
Algeria	199,143	144,725	231,361	174,727
Australasia	7,942	31,994	11,506	45,809
Canada	—	—	14,918	10,840
France	43,385	31,471	38,274	26,543
Greece	296,428	245,060	319,759	271,826
Italy...	114,961	90,973	94,771	78,803
Spain	4,684,333	3,378,816	6,186,022	4,598,636
Sweden	92,546	69,733	105,193	83,172
Turkey	5,195	22,789	11,950	49,005
Other Countries	24,463	19,087	40,824	35,557
Total	5,468,396	4,034,648	**7,054,578**	**5,374,918**

TABLE 185.

EXPORTS of BRITISH IRON ORE from the UNITED KINGDOM in the Year 1899 and the preceding Year. (Return by Board of Customs.)

Countries to which Exported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
Belgium	346	433	76	185
France	1,188	1,411	1,929	2,810
United States	35	48	699	1,640
Other Countries...	74	120	442	1,057
Total	1,643	2,012	**3,146**	**5,692**

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TABLE 186.

EXPORTS of FOREIGN IRON ORE from the UNITED KINGDOM in the Year 1899 and the preceding Year. (Return by Board of Customs.)

Countries to which Exported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
Belgium	529	2,020	828	3,084
France	20	100	192	598
United States	4,849	20,748	4,660	18,987
Other Countries	1,879	7,462	2,891	10,373
Total	7,277	30,330	**8,571**	**33,042**

TABLE 187.

TOTAL QUANTITY of IRON ORE produced in and imported into the UNITED KINGDOM in 1899 and the preceding Year.

Year	United Kingdom.	Foreign Ores (including "Purple Ore").	Total.
	Quantity produced.	Quantity Imported.	
	Tons.	Tons.	Tons.
1899	**14,461,330**	**7,580,458**	**22,041,788**
Preceding Year	14,176,938	5,958,943	20,135,881

TABLE 188.

GENERAL SUMMARY showing the QUANTITY of IRON ORE available for the FURNACES of GREAT BRITAIN in the Year 1899.

	Tons.
The total quantity of Iron Ore from mines and quarries in the United Kingdom	14,461,330
Foreign Ores imported	7,054,578
"Purple Ore" or residue of Cupreous Iron Pyrites, calculated at 75 per cent. of 701,174 tons of raw Cupreous Iron Pyrites imported (*see* p. 223).	525,880
Total	22,041,788
Less British and Foreign Iron Ores exported	11,717
Total quantity of Iron Ore available for the Furnaces, exclusive of Mill, Forge, &c. Cinders used in some Furnaces.	**22,030,071**

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Iron—Pig Iron Production.

TABLE 189.

GENERAL SUMMARY of the PRODUCTION of PIG IRON in GREAT BRITAIN, from IRON ORES of British and Foreign origin, and of the COAL used (including COAL converted into COKE).

COUNTY.	Number of Works in Operation.	Furnaces. Number Built.	Furnaces. Number in Blast.	Pig Iron made.	Iron Ore used, including Cinder.	Coal used.
ENGLAND:				Tons.	Tons.	Tons.
Cumberland	12	43	28 4/12	954,637	1,801,323	1,869,320
Derby (including production of Nottingham).	11	46	39 4/12	571,994	1,765,636	1,434,649
Durham (including production of Northumberland).	9	41	30	1,040,174	2,521,131	2,015,053
Lancaster	7	39	23 4/12	744,065	1,408,553	1,402,468
Leicester	1	4	4	408,989	1,363,972	1,086,942
Lincoln	5	22	16			
Monmouth	7	32	13 1/12	350,674	703,198	811,042
Northampton	7	24	14 8/12	279,301	670,845	529,620
Northumberland (*see* Durham).	1	2	6/12	—	—	—
Nottingham (*see* Derby) ...	2	6	5	—	—	—
Salop	3	9	4	40,597	90,194	114,477
Stafford, North	8	34	20 10/12	283,212	897,442	497,400
Stafford, South	17	44	19	338,283	772,334	706,347
Wilts	1	2	1	76,547	180,224	170,933
Worcester	3	6	3			
York, North Riding ...	18	82	66 8/12	2,211,222	5,975,000	4,381,114
York, West Riding	9	27	19	305,583	868,189	765,758
Total	121	463	307 8/12	7,605,278	19,018,041	15,785,123
WALES:						
Carmarthen	1	2	0	—	—	—
Denbigh	2	4	1	66,586	147,987	227,787
Flint	1	2	2			
Glamorgan	8	35	15 4/12	578,741	1,089,602	906,023
Total	12	43	18 8/12	645,327	1,237,589	1,133,810
SCOTLAND:						
Ayr	6	31	26 8/12	345,488	815,107	646,781
Fife	1	2	0	—	—	—
Lanark	11	70	55 8/12	825,342	1,749,565	1,495,604
Stirling	1	4	3 8/12			
Total	19	107	85 8/12	1,170,830	2,564,672	2,142,385
Total for 1899	**152**	**613**	**411 8/12**	**9,421,435**	**22,820,302**	**19,061,318**
Total for preceding Year	156	625	377 11	8,609,719	20,958,167	17,196,436

The value of the 9,421,435 tons of Pig Iron obtained from British and Foreign Ores in 1899, according to the average price for the year, is £32,661,373, of which £17,034,874 is due to Pig Iron from British Ore.

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TABLE 190.

QUANTITIES and VARIETIES of PIG IRON made in GREAT BRITAIN from BRITISH and FOREIGN IRON ORES in 1899.

County.	Hæmatite.	Ordinary and Basic.	Spiegeleisen, Ferro-manganese, Chrome, and Silicon Iron.	Total.
ENGLAND:	Tons.	Tons.	Tons.	Tons.
Cumberland	886,495	17,142	51,000	954,637
Derby (including Nottingham)	—	571,994	—	571,994
Durham (including Northumberland)	568,854	471,320	—	1,040,174
Lancaster	626,741	51,558	65,766	744,065
Leicester, Lincoln	—	408,989	—	408,989
Monmouth	279,592	55,967	15,095	350,674
Northampton	—	279,301	—	279,301
Northumberland (*see* Durham)	—	—	—	—
Nottingham (*see* Derby)	—	—	—	—
Salop	—	40,597	—	40,597
Stafford, North	—	283,212	—	283,212
Stafford, South	—	338,283	—	338,283
Wilts, Worcester	—	76,547	—	76,547
York, North Riding	684,136	1,426,849	100,237	2,211,222
York, West Riding	—	305,583	—	305,583
Total	3,045,818	4,327,342	232,098	7,605,278
WALES:				
Denbigh, Flint	—	66,586	—	66,586
Glamorgan	578,741	—	—	578,741
Total	578,741	66,586	—	645,327
SCOTLAND:				
Ayr	128,138	217,350	—	345,488
Lanark, Stirling	453,396	355,136	16,810	825,342
Total	581,534	572,486	16,810	1,170,830
Total for 1899	**4,206,093**	**4,966,414**	**248,908**	**9,421,435**
Total for preceding Year	3,597,213	4,808,590	203,916	8,609,719

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TABLE 191.

BLAST FURNACES in GREAT BRITAIN, MAKE of PIG IRON, and QUANTITY of IRON ORE (including Cinder) and COAL used.

DETAILS of PRODUCTION.

(Fractions show the proportion of the year the furnaces were in blast.)

Name and Situation of Furnaces.	Owners.	Furnaces. Number.	Furnaces. Average in Blast during the Year.
ENGLAND.			
CUMBERLAND:			
Cleator Moor, Cleator Moor, viâ Carnforth.	Whitehaven Hæmatite Iron and Steel Co., Ltd.	4	2
Derwent Iron and Steel, Workington...	Charles Cammell & Co., Ltd.	5	$4\frac{11}{13}$
Distington, Whitehaven	Distington Hæmatite Iron Co., Ltd.	3	2
Harrington, Harrington, R.S.O. ...	James Bain & Co.	4	2
Lonsdale, Whitehaven	Lonsdale Hæmatite Smelting Co., Ltd. ...	3	2
Lowther, Workington	Lowther Hæmatite Iron and Steel Co., Ltd. ...	3	2
Millom, Millom, S.O.	Millom and Askam Hæmatite Iron Co., Ltd. ...	6	4
Moss Bay, Workington	Moss Bay Hæmatite Iron and Steel Co., Ltd....	4	$2\frac{4}{13}$
New Yard, Workington	Kirk Brothers & Co. (19, Marsh Side, Workington).	1	1
North Western Hæmatite Steel, Workington.	North Western Hæmatite Steel Co., Ltd. ...	5	2
Solway Hæmatite Iron, Maryport ...	Charles Cammell & Co., Ltd.	2	2
Workington Hæmatite Iron and Steel, Workington.	Workington Hæmatite Iron and Steel Co., Ltd.	3	2
Total		43	$28\frac{4}{13}$
Total make of pig iron, 954,637 tons. Total iron ore used, 1,801,323 tons. Total coal used (including coal converted into coke), 1,869,320 tons.			
DERBYSHIRE:			
Alfreton, Riddings, Alfreton	James Oakes & Co.	3	3
Broad Oaks, Chesterfield	Staveley Coal and Iron Co., Ltd.	3	3
Butterley, Alfreton	The Butterley Co., Ltd.	2	2
Clay Cross, Chesterfield	The Clay Cross Co.	3	2
Codnor Park, Alfreton	The Butterley Co., Ltd.	3	0
Denby, Derby	The Denby Iron and Coal Co., Ltd.	4	3
Erewash Valley, Ilkeston	E. P. Davis	2	2
Renishaw, Chesterfield	Renishaw Iron Co.	3	3
Sheepbridge, Chesterfield	Sheepbridge Coal and Iron Co., Ltd.	6	$4\frac{6}{13}$
Stanton, Nottingham	Stanton Iron Works Co., Ltd.	9	$8\frac{9}{13}$
Staveley, Chesterfield	Staveley Coal and Iron Co., Ltd.	8	8
Total		46	$39\frac{3}{13}$
Total make of pig iron, including Nottinghamshire, 571,994 tons. Total iron ore used, 1,765,636 tons. Total coal used (including coal converted into coke), 1,434,649 tons.			
DURHAM:			
Carlton, viâ Ferry Hill...	Carlton Iron Co., Ltd.	3	2
Clarence, Port Clarence	Bell Brothers, Ltd.	12	10
Consett, Consett, Durham	Consett Iron Co., Ltd.	7	7
Jarrow, Jarrow-on-Tyne	Palmer's Shipbuilding and Iron Co., Ltd. ...	5	4
Middleton, Darlington	Joseph Torbock	4	0
Seaton Carew, West Hartlepool ...	Seaton Carew Iron Co., Ltd.	3	3
Stockton, Stockton-on-Tees	Joseph Torbock	2	0
Tees Bridge, Stockton-on-Tees ...	Tees Bridge Iron Co., Ltd.	3	2
Tudhoe, Spennymoor	Weardale Iron and Coal Co., Ltd.	2	2
Total		41	30
Total make of pig iron, including Northumberland, 1,040,174 tons. Total iron ore used, 2,521,131 tons. Total coal used (including coal converted into coke), 2,015,053 tons.			

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Blast Furnaces—*continued.*

Name and Situation of Furnaces.	Owner.	Blast Furnaces. Number.	Blast Furnaces. Average in Blast during the Year.
LANCASHIRE:			
Askam, Askam-in-Furness	Millom and Askam Hæmatite Iron Co., Ltd....	3	2
Backbarrow, Ulverston...	Harrison, Ainslie, & Co., Ltd.	2	$\frac{6}{12}$
Barrow Steel, Barrow-in-Furness ...	Barrow Hæmatite Steel Co., Ltd.	12	$9\frac{10}{12}$
Carnforth Hæmatite, Carnforth ...	Carnforth Hæmatite Iron Co., Ltd.	6	3
Darwen, Darwen	Darwen and Mostyn Iron Co., Ltd.	2	1
Kirkless Hall, Ince, Wigan	Wigan Coal and Iron Co., Ltd.	10	4
North Lonsdale, Ulverston	North Lonsdale Iron and Steel Co., Ltd. ...	4	3
Total		39	$23\frac{4}{12}$
Total make of pig iron, 744,065 tons. Total iron ore used, 1,408,553 tons. Total coal used (including coal converted into coke), 1,402,468 tons.			
LEICESTERSHIRE:			
Holwell, Asfordby, near Melton Mowbray	Holwell Iron Co., Ltd.	4	4
The make of pig iron and the quantity of iron ore and coal used are included in the figures for Lincolnshire.			
LINCOLNSHIRE:			
Appleby, Frodingham	Appleby Iron Co., Ltd.	4	4
Frodingham Iron and Steel, Frodingham, Doncaster.	Frodingham Iron and Steel Co.	4	3
North Lincolnshire, Scunthorpe, Doncaster	North Lincolnshire Iron Co., Ltd.	4	4
Redbourn Hill and Lindsey, Frodingham	Redbourn Hill Iron and Coal Co., Ltd. ...	4	3
Trent, Scunthorpe, near Doncaster ...	William Shakespeare	6	2
Total		22	16
Total make of pig iron, including Leicestershire, 408,989 tons. Total iron ore used, 1,363,972 tons. Total coal used (including coal converted into coke), 1,086,942 tons.			
MONMOUTHSHIRE:			
Blaenavon, Newport	Blaenavon Co., Ltd.	9	4
Cwmbran, „	Patent Nut and Bolt Co., Ltd.	1	1
Ebbw Vale, „	Ebbw Vale Steel, Iron, and Coal Co., Ltd. ...	6	5
Pyle and Blaina, Blaina	Pyle and Blaina Works, Ltd.	2	$1\frac{1}{12}$
Rhymney, Newport	Rhymney Iron Co., Ltd....	9	0
Tredegar, „	Tredegar Iron and Coal Co., Ltd.	5	2
Victoria, „	Ebbw Vale Steel, Iron, and Coal Co., Ltd. ...	*	*
Total		32	$13\frac{1}{12}$
Total make of pig iron, 350,674 tons. Total iron ore used, 703,198 tons. Total coal used (including coal converted into coke), 811,042 tons.			
* Included with Ebbw Vale.			
NORTHAMPTONSHIRE:			
Cransley, Kettering	New Cransley Iron and Steel Co., Ltd. ...	2	2
Finedon, Wellingborough	Islip Iron Co.	6	0
Hunsbury Hill, Northampton	P. Phipp's Executors	2	$1\frac{8}{12}$
Irthlingborough, Wellingborough ...	Thomas Butlin & Co., Ltd.	4	$2\frac{9}{12}$
Islip, Thrapston	Islip Iron Co.	4	3
Kettering, Kettering	Kettering Iron and Coal Co., Ltd.	3	$2\frac{9}{12}$
Wellingborough, Wellingborough ...	Wellingborough Iron Co., Ltd.	3	2
Total		24	$14\frac{3}{12}$
Total make of pig iron, 279,301 tons. Total iron ore used, 670,845 tons. Total coal used (including coal converted into coke), 529,620 tons.			

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Blast Furnaces—*continued.*

Name and Situation of Furnaces.	Owner.	Furnaces. Number.	Furnaces. Average in Blast during the Year.
NORTHUMBERLAND:			
Elswick, Newcastle-on-Tyne	Sir W. G. Armstrong, Whitworth, & Co., Ltd.	2	$\frac{4}{12}$
The make of pig iron and the quantity of iron ore and coal used are included in the figures for Durham.			
NOTTINGHAMSHIRE:			
Bennerley (Awsworth), Ilkeston ...	E. P. Davis	2	2
Bestwood, Nottingham	Bestwood Coal and Iron Co., Ltd.	4	3
Total		6	5
The make of pig iron and the quantity of iron ore and coal used are included in the figures for Derbyshire.			
SHROPSHIRE:			
Madeley Court, Ironbridge	William Orme Foster	3	1
Madeley Wood, Ironbridge	Madeley Wood Co.	3	$1\frac{3}{12}$
Priors Lee, Shifnal	Lilleshall Co., Ltd.	3	2
Total		9	$4\frac{3}{12}$
Total make of pig iron, 40,597 tons. Total iron ore used, 90,194 tons. Total coal used (including coal converted into coke), 114,477 tons.			
STAFFORDSHIRE, NORTH:			
Apedale, Newcastle	Midland Coal, Coke, and Iron Co., Ltd. ...	6	$1\frac{10}{12}$
Biddulph and Norton, Stoke-on-Trent	Robert Heath and Sons, Ltd.	8	6
Chatterley, Tunstall	Chatterley-Whitfield Collieries, Ltd.	3	1
Goldendale, Stoke-on-Trent	Goldendale Iron Co.	3	2
Great Fenton, Stoke-on-Trent ...	Stafford Coal and Iron Co., Ltd.	3	3
Longton Hall, Longton	Longton Hall Co., Ltd.	3	0
Shelton, Stoke-on-Trent	Shelton Iron, Steel, and Coal Co., Ltd. ...	6	5
Silverdale, Newcastle	The Butterley Co., Ltd.	2	2
Total		34	$20\frac{10}{12}$
Total make of pig iron, 283,212 tons. Total iron ore used, 897,442 tons. Total coal used (including coal converted into coke), 497,400 tons.			
STAFFORDSHIRE, SOUTH:			
Barbor's Field, Bilston	Unoccupied	2	0
Birchills, Walsall	John Russell & Co., Ltd.	2	0
Capponfield, Bilston	T. and I. Bradley, Ltd.	2	2
Corngreaves, near Birmingham ...	W. Bassano & Co.	2	1
Darlaston Green, Darlaston	T. and I. Bradley and Sons	2	1
Dudley Port, Dudley Port, Tipton ...	Dudley Port Furnace Co.	1	0
Hange, Tividale, Tipton	Round Brothers	2	1
Hatherton, Bloxwich, Walsall	George and Richard Thomas	2	1
Millfield, Bilston	W. H. Sparrow	3	0
Mitre Tipton	Philip Williams and Sons	2	1
New Level, Brierley Hill	The Earl of Dudley (*Priory Offices, Dudley*)...	5	2
New Priestfields, Willenhall	William Ward and Sons	2	0
Old Hill, near Dudley	N. Hingley and Sons, Ltd.	2	1
Priorsfield, Bilston	H. B. Whitehouse and Son	3	2
Spring Vale, Bilston	Sir Alfred Hickman, Ltd.	6	4
Tipton Green, Tipton	Roberts & Co.	4	2
Willingsworth, Wednesbury	The Willingsworth Iron Co.	2	1
Total		44	19
Total make of pig iron, 338,283 tons. Total iron ore used, 772,334 tons. Total coal used (including coal converted into coke), 706,347 tons.			

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Blast Furnaces—*continued.*

Name and Situation of Furnaces.	Owner.	Furnaces. Number.	Furnaces. Average in Blast during the Year.
WILTSHIRE:			
Westbury, Westbury	Westbury Iron Co., Ltd.	2	1
Total make of pig iron and the quantity of iron ore and coal used are included in the figures for Worcestershire.			
WORCESTERSHIRE:			
Netherton Iron Works, Dudley ...	M. and W. Grazebrook	2	1
Netherton Furnaces, Dudley	Joseph H. Pearson	2	1
Woodside, Dudley	Cochrane & Co.	2	1
Total		6	3
Total make of pig iron, including Wiltshire, 76,547 tons. Total iron ore used, 180,224 tons. Total coal used (including coal converted into coke), 170,933 tons.			
YORKSHIRE—NORTH RIDING, or *Cleveland District:*			
Acklam, Middlesbrough	North Eastern Steel Co., Ltd.	4	3
Ayresome, Middlesbrough	Gjers, Mills, & Co.	4	4
Cargo Fleet, Middlesbrough	Cargo Fleet Iron Co., Ltd.	5	4
Clay Lane, South Bank, Middlesbrough	Clay Lane Iron Co., Ltd.	6	5
Cleveland, South Bank, Middlesbrough	Bolckow, Vaughan, & Co., Ltd.	8	5
Cleveland Steel (Eston), South Bank, Middlesbrough.	Bolckow, Vaughan, & Co., Ltd.	3	3
Coatham, Redcar, Middlesbrough ...	J. M. Lennard and Wm. Whitwell	3	0
Lackenby, Middlesbrough	Bolckow, Vaughan, & Co., Ltd.	3	2
Linthorpe, Middlesbrough	Edward Williams	6	$3\frac{11}{12}$
Middlesbrough, Middlesbrough ...	Bolckow, Vaughan, & Co., Ltd....	2	2
Newport, Middlesbrough	Sir B. Samuelson & Co., Ltd.	8	$6\frac{9}{12}$
Normanby, Middlesbrough	Normanby Iron Works Co., Ltd.	3	3
Ormesby, Middlesbrough	Cochrane & Co., Ltd.	4	3
Redcar, Middlesbrough	Walker, Maynard, & Co....	4	4
Skinningrove, Carlin How, R.S.O. ...	Skinningrove Iron Co., Ltd.	4	4
South Bank, Middlesbrough	Bolckow, Vaughan, & Co., Ltd....	8	7
Tees, Middlesbrough	Wilsons, Pease, & Co.	4	4
Thornaby, Stockon-on-Tees	William Whitwell & Co., Ltd.	3	$2\frac{9}{12}$
Total		82	$66\frac{5}{12}$
Total make of pig iron, 2,211,222 tons. Total iron ore used, 5,975,000 tons. Total coal used (including coal converted into coke), 4,381,114 tons.			
YORKSHIRE—WEST RIDING:			
Atlas Steel and Iron, Sheffield	John Brown & Co., Ltd....	3	2
Farnley, Leeds	Farnley Iron Co., Ltd.	2	1
Leeds Steel, Hunslet, Leeds	Leeds Steel Works, Ltd....	3	3
Low Moor, Bradford	Low Moor Co., Ltd.	3	1
Park Gate, Rotherham	Park Gate Iron and Steel Co., Ltd.	5	5
Thorncliffe, Sheffield	Newton, Chambers, & Co., Ltd.	2	2
Tinsley Steel, Iron, and Wire, Sheffield	William Cooke & Co., Ltd.	2	1
West Yorkshire, Ardsley Junction, Wakefield.	West Yorkshire Iron and Coal Co., Ltd. ...	5	3
White Horse, York Road, Leeds ...	York Road Iron Co.	2	1
Total		27	19
Total make of pig iron, 305,583 tons. Total iron ore used, 868,189 tons. Total coal used (including coal converted into coke), 765,758 tons.			

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Blast Furnaces—*continued.*

Name and Situation of Furnaces.	Owner	Furnaces. Number.	Furnaces. Average in Blast during the Year.
WALES.			
CARMARTHENSHIRE:			
Anthracite Iron and Steel, Trimsaran, by Kidwelly.	Anthracite Iron and Steel Co., Ltd.	2	0
DENBIGHSHIRE:			
Brymbo Iron and Steel, Wrexham ...	Brymbo Steel Co., Ltd.	2	1
Ffrwd, Wrexham	James Sparrow & Son	2	$\frac{5}{52}$
Total		4	$1\frac{5}{52}$
Total make of pig iron, including Flintshire, 66,586 tons. Total iron ore used, 147,987 tons. Total coal used (including coal converted into coke), 227,787 tons.			
FLINTSHIRE:			
Darwen and Mostyn, Mostyn	Darwen and Mostyn Iron Co., Ltd.	2	2
The make of pig iron and the quantity of iron ore and coal used are included in the figures for Denbighshire.			
GLAMORGANSHIRE:			
Briton Ferry, Briton Ferry	Briton Ferry Works, Ltd.	2	1
Cardiff Iron and Steel, Cardiff... ...	Dowlais Iron Co.	4	$2\frac{3}{52}$
Cefn, Cefn Cribbwr, Bridgend... ...	Cefn Iron Works, Ltd.	1	1
Cwm Avon, Port Talbot	Wright, Butler, & Co., Ltd.	2	0
Cyfarthfa Iron and Steel, Treforest, Merthyr Tydfil.	Crawshay Brothers, Cyfarthfa, Ltd.	9	4
Dowlais, Dowlais	Dowlais Iron Co.	14	$5\frac{6}{52}$
Swansea Hæmatite Iron, Landore, R.S.O.	Swansea Hæmatite Iron Co., Ltd.	2	$1\frac{7}{52}$
Tondu, Bridgend	North's Navigation Collieries (1889), Ltd., Aberkenfig, R.S.O.	1	0
Total		35	$15\frac{6}{52}$
Total make of pig iron, 578,741 tons. Total iron ore used, 1,089,602 tons. Total coal used (including coal converted into coke), 906,023 tons.			
SCOTLAND.			
AYRSHIRE:			
Ardeer, Stevenston	Glengarnock Iron and Steel Co., Ltd.	5	3
Dalmellington, Ayr	Dallmellington Iron Co., Ltd.	6	6
Eglinton, Kilwinning	William Baird & Co., Ltd., 168, West George Street, Glasgow.	6	4
Glengarnock, Glengarnock	Glengarnock Iron and Steel Co., Ltd.	6	$5\frac{5}{52}$
Lugar, Cumnock...	William Baird & Co., Ltd., 168, West George Street, Glasgow.	5	5
Muirkirk, Muirkirk	William Baird & Co., Ltd., 168, West George Street, Glasgow.	3	3
Total		31	26
Total make of pig iron, 345,488 tons. Total iron ore used, 815,107 tons. Total coal used (including coal converted into coke), 646,781 tons.			
FIFESHIRE:			
Lumphinnans, Cowdenbeath	The Fife Coal Co., Ltd....	2	0

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Blast Furnaces—*continued.*

Name and Situation of Furnaces.	Owner.	Furnaces.	
		Number.	Average in Blast during the Year.
LANARKSHIRE:			
Calder, Coatbridge	William Dixon, Ltd.	6	$5\frac{12}{13}$
Carnbroe, Coatbridge	Merry and Cuninghame, Ltd.	5	4
Clyde, Tolcross, Glasgow	James Dunlop & Co., Ltd.	5	4
Coltness, Newmains	Coltness Iron Co., Ltd.	9	$8\frac{8}{13}$
Gartsherrie, Coatbridge	William Baird & Co., Ltd., 168, West George Street, Glasgow.	12	12
Govan, Glasgow	William Dixon, Ltd., 1, Dixon Street, Glasgow	6	6
Langloan, Coatbridge	Robert Addie & Sons	6	0
Quarter-Clyde, Hamilton	Colin Dunlop & Co.	5	0
Shotts, Shotts, R.S.O.	Shotts Iron Co.: Office, 130, George Street, Edinburgh.	5	$4\frac{8}{13}$
Summerlee, Coatbridge	Summerlee and Mossend Iron and Steel Co., Ltd.	7	6
Wishaw, Wishaw	Glasgow Iron and Steel Co., Ltd.	4	4
Total		70	$55\frac{8}{13}$
Total make of pig iron, including Stirlingshire, 825,342 tons. Total iron ore used, 1,749,565 tons. Total coal used (including coal converted into coke), 1,495,604 tons.			
STIRLINGSHIRE:			
Carron, Carron	Carron Co.	4	$3\frac{8}{13}$
The make of pig iron and the quantity of iron ore and coal used are included in the figures for Lanarkshire.			

TABLE 192.

Number of Blast Furnaces in operation in Great Britain, the Quantity of Pig Iron produced, and the Quantity of Ore and Coal used in its production, for each Year from 1873 to 1899.

Year.	Furnaces in Blast.	Pig Iron made.	Iron Ore smelted.	Coal used.
	Number.	Tons.	Tons.	Tons.
1873	683	6,566,451	16,820,035	16,718,532
1874	649	5,991,408	15,854,077	15,292,201
1875	629	6,365,462	16,559,753	15,645,774
1876	585	6,555,997	17,813,818	15,598,381
1877	541	6,608,664	18,250,110	15,342,445
1878	498	6,381,051	17,299,781	14,112,305
1879	497	5,995,337	15,797,080	13,117,411
1880	567	7,749,233	21,086,740	16,982,629
1881	565	8,144,449	20,249,263	17,484,990
1882	570	8,586,680	21,249,462	17,796,301
1883	552	8,529,300	21,013,275	17,775,000
1884	476	7,811,727	18,887,505	16,077,800
1885	434	7,415,469	17,937,966	15,287,527
1886	399	7,009,754	17,297,483	14,249,715
1887	405	7,559,518	18,363,583	15,304,188
1888	425	7,998,969	19,152,074	16,131,267
1889	445	8,322,824	19,683,948	16,766,694
1890	414	7,904,214	19,213,916	16,168,538
1891	376	7,406,064	18,518,192	15,373,711
1892	362	6,709,255	16,344,454	13,860,161
1893	327	6,976,990	16,620,653	13,806,720
1894	325	7,427,342	17,803,998	14,884,800
1895	344	7,703,459	18,629,337	15,224,517
1896	373	8,659,681	21,204,284	17,114,374
1897	380	8,796,465	21,327,013	17,552,430
1898	378	8,609,719	20,958,167	17,196,436
1899	**411**	**9,421,435**	**22,820,302**	**19,061,318**

NOTE.—From 1873 to 1881 these returns were obtained from owners of blast furnaces by the late Mr. Robt. Hunt, Keeper of Mining Records, and since 1881 the returns have been furnished by the owners to the Secretary of State.

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TABLE 193.

QUANTITY of PIG IRON produced in the UNITED KINGDOM from BRITISH and FOREIGN ORES, the QUANTITY EXPORTED, and the AMOUNT available for HOME CONSUMPTION.

Year.	Pig Iron produced from British and Foreign Ores.	Pig Iron Exported.	Pig Iron available for Home Consumption.
	Tons.	Tons.	Tons.
1899	**9,421,435**	**1,380,342**	**8,041,093**
1898	8,609,719	1,042,853	7,566,866

TABLE 194.

MEAN PRICES of PIG IRON at the WORKS, for each MONTH of the year 1899. (From "The Iron and Coal Trades Review.")

Month.	"Cleveland," No. 3 f.o.b. Tees.	North Staffordshire, "Mine No. 1" at Works.	South Staffordshire, "Part-Mine" at Works.	North-West "Bessemer Pig" f.o.b.	"Scotch Pig" f.o.b. Clyde, from Messrs. Watson and Co.'s Annual Circular.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
January	2 8 9	2 12 0	2 13 9	2 19 2	2 12 3
February	2 11 0	2 13 6	2 13 9	3 1 2	2 14 10
March	2 10 5	2 13 6	2 13 9	3 0 4	2 14 3
April	2 11 2	2 13 6	2 13 9	3 0 8	2 16 2
May	2 17 1	2 13 6	2 13 9	3 4 8	3 3 6
June	3 4 5	2 14 4	3 0 10	3 10 6	3 6 7
July	3 13 8	2 17 6	3 7 6	3 17 1	3 11 8
August	3 8 5	2 17 6	3 10 8	3 15 10	3 8 2
September	3 9 5	2 17 6	3 14 3	3 16 5	3 9 8
October	3 11 0	2 18 9	3 15 11	3 17 0	3 9 9
November	3 12 8	3 2 6	3 16 3	4 0 5	3 11 5
December	3 10 2	3 3 0	3 18 0	3 18 11	3 6 8
Highest prices ...	3 17 0	3 7 6	4 2 6	4 3 0	3 15 7
Lowest	2 7 0	2 8 6	2 10 0	2 17 0	2 9 7
Mean of monthly prices for 1899	**3 2 4**	**2 16 5**	**3 4 4**	**3 10 3**	**3 3 9**
Mean of monthly prices for preceding Year ...	2 4 6	2 10 6	2 10 9	2 14 7	2 7 2

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TABLE 195.

Average Price per Ton of PIG IRON, and the Average Price per Ton of the Quantity Exported, in each Year from 1873 to 1899.

Year	Cleveland Pig f.o.b.	West Coast Bessemer Pig f.o.b.	Pig Iron of all Kinds Exported.
	£ s. d.	£ s. d.	£ s. d.
1873	5 15 0	8 9 3	6 4 3
1874	3 15 6	5 9 7	4 14 0
1875	3 0 0	4 1 7	3 12 6
1876	2 13 0	3 14 2	3 2 4
1877	2 5 6	3 12 9	2 17 3
1878	2 2 3	3 0 0	2 13 4
1879	2 1 2	2 17 6	2 11 6
1880	2 10 6	4 4 6	3 3 10
1881	1 19 2	3 1 2	2 15 3
1882	2 3 6	2 18 6	2 16 1
1883	1 19 6	2 11 9	2 11 10
1884	1 16 8	2 6 10	2 6 0
1885	1 13 0	2 4 6	2 3 1
1886	1 10 8	2 3 7	2 2 6
1887	1 14 2	2 6 2	2 6 8
1888	1 12 9	2 4 8	2 2 4
1889	2 3 7	2 12 3	2 10 0
1890	2 7 11	—	3 0 11
1891	2 0 1	—	2 12 4
1892	1 18 7	2 9 7	2 11 1
1893	1 14 11	2 6 0	2 6 11
1894	1 15 10	2 5 6	2 6 0
1895	1 16 3	2 6 6	2 7 11
1896	2 0 11	2 9 3	2 7 10
1897	2 3 3	2 10 6	2 8 1
1898	2 4 6	2 14 7	2 12 6
1899	**3 2 4**	**3 10 3**	**3 9 4**

TABLE 196.

EXPORTS of IRON and STEEL in the Year 1899 and the preceding Year. (Return by Board of Customs.)

Iron and Steel.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
IRON:	Tons.	£	Tons.	£
Pig	1,042,853	2,739,093	1,380,342	4,785,244
Bar, angle, bolt, and rod	150,119	993,973	159,659	1,229,088
Railroad	609,403	3,011,645	590,667	3,127,474
Wire (except telegraph wire)	44,123	772,604	48,498	886,347
Black plates for tinning (iron and steel)	58,327	541,886	85,729	829,715
Tinplates and sheets	250,953	2,744,077	256,373	3,168,614
Cast and wrought	355,662	4,732,459	358,773	5,242,150
Hoops, sheets, and boiler plates	327,788	3,311,557	347,937	4,053,235
Old, for re-manufacture	84,802	238,561	115,726	388,322
STEEL:				
Unwrought	285,249	2,640,186	329,309	3,363,826
Steel and iron combined	35,071	904,231	44,167	1,027,034
Total	3,244,350	22,630,272	**3,717,180**	**28,101,049**

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TABLE 197.

DISTRIBUTION of the EXPORTS of the following DESCRIPTIONS of IRON for the Year 1899. (Return by Board of Customs.)

Countries to which Exported.	Pig.	Bar, Angle, Bolt, and Rod.	Railroad of all kinds.	Hoops, Sheets, and Boiler Plates.
	Tons.	Tons.	Tons.	Tons.
Argentine Republic	1,694	7,163	25,155	26,760
Australasia...	28,412	40,430	57,006	71,020
Belgium	114,157	928	467	1,854
Brazil	1,994	5,582	16,381	5,906
British East Indies	13,569	23,495	157,801	62,970
British North America	11,424	4,284	34,782	19,098
British Possessions in South Africa	992	7,179	23,720	23,577
Chili	1,328	4,205	8,324	6,094
Denmark	20,974	4,327	8,294	2,955
Egypt	1,693	2,087	35,927	6,678
France	125,550	728	1,054	1,352
Germany	438,742	4,601	945	3,372
Holland	265,763	3,110	497	4,281
Italy	117,181	1,029	1,652	2,147
Mexico	90	1,044	17,673	6,681
Peru	222	744	749	1,355
Russia	82,005	3,688	14,773	8,858
Spain and Canaries	5,970	630	4,573	1,973
Sweden and Norway	71,340	5,009	76,823	5,519
Turkey	968	497	2,377	1,974
United States	35,745	4,453	95	1,989
Other Countries	40,529	34,446	101,599	81.524
Total for 1899	**1,380,342**	**159,659**	**590,667**	**347,937**
Total for preceding Year	1,042,853	150,119	609;403	327,788

Iron Pyrites.

Great Britain is dependent mainly upon Spain for its supplies of sulphur-bearing minerals, and the quantities now raised at home are small. Nodules of more or less pure iron pyrites are picked out at some coal mines, and the mineral is also worked on a small scale in Ireland.

TABLE 198.

SUMMARY of OUTPUT.

County.	Quantities.	Comparison with preceding Year.	Value at the Mine.
ENGLAND :	Tons.	Tons.	£
Derby	2,413	+ 368	
Lancaster, North and East	642	— 337	
Ditto West	70	— 62	
Nottingham	90	+ 14	3,682
Salop	160	+ 42	
Stafford	735	+ 27	
Warwick	5,709	+ 243	
Total	9,819	+ 295	3,682
IRELAND :			
Wicklow	2,411	— 173	989
Total for 1899	**12,230**	+ 122	**4,671**
Total for preceding Year	12,108	+1,525	4,804

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TABLE 199.

Table showing the Annual Production and Value of IRON PYRITES in the United Kingdom from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	58,924	35,485	1882	25,403	14,459	1891	15,463	8,002
1874	56,208	38,226	1883	27,672	17,467	1892	13,967	6,957
1875	48,035	35,136	1884	29,104	18,139	1893	15,837	7,292
1876	48,810	43,870	1885	29,860	18,517	1894	15,523	8,042
1877	43,948	28,226	1886	27,829	16,575	1895	9,048	4,114
1878	29,868	19,099	1887	22,079	12,682	1896	10,017	4,603
1879	20,276	11,836	1888	23,507	11,302	1897	10,583	4,525
1880	31,708	23,004	1889	17,719	8,111	1898	12,108	4,804
1881	43,617	30,033	1890	16,018	7,666	**1899**	**12,230**	**4,671**

TABLE 200.

IMPORTS of IRON PYRITES, chiefly CUPREOUS IRON PYRITES, into the UNITED KINGDOM, in the Year 1899. (Return by Board of Customs.)

Port into which Imported.	Quantity.	Declared Value.	Port into which Imported.	Quantity.	Declared Value.
ENGLAND AND WALES:	Tons.	£	SCOTLAND:	Tons.	£
Berwick	3,355	8,378	Aberdeen	3,460	7,813
Bristol	17,119	42,803	Ardrossan	2,809	4,945
Cardiff	1,310	3,014	Bo'ness	8,067	12,101
Chester	3,563	2,617	Dundee	3,731	6,529
Exeter	1,386	1,381	Glasgow	54,542	96,256
Falmouth	1,038	2,106	Leith	8,601	14,845
Fleetwood	8,326	8,322	Troon	13,328	22,876
Goole	28,071	42,187			
Grimsby	530	925			
Hartlepool	47,449	31,890			
Harwich	4,530	4,954	IRELAND:		
Hull	19,209	32,530			
Ipswich	8,850	22,116	Belfast	6,948	5,476
Liverpool	204,243	404,799	Cork	3,721	3,570
London	73,960	105,443	Drogheda	1,447	1,400
Lynn	12,276	18,396	Dublin	15,776	35,459
Manchester	25,439	20,084	Londonderry	1,473	4,400
Middlesbrough	9,226	6,884			
Newcastle	22,548	43,299			
Newport	15,233	18,023			
Plymouth	10,101	20,190	**Total for 1899 ...**	**701,174**	**1,164,667**
Shields, North	38,764	77,524			
Shoreham	1,016	2,040			
Southampton	1,400	1,400			
Stockton	1,750	1,435			
Swansea	15,579	23,252			
Yarmouth	1,000	3,000	Total for preceding Year...	654,063	1,080,543

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TABLE 201.

COUNTRIES whence the IRON PYRITES was EXPORTED to the UNITED KINGDOM. (Return by Board of Customs.)

Year.	Norway.	France.	Portugal.	Spain.	Other Parts.	Total Quantities.	Total Value.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	£
1899	**25,158**	**46,847**	**12,305**	**600,679**	**16,185**	**701,174**	**1,164,667**
Preceding Year ...	28,880	45,632	18,419	556,907	4,225	654,063	1,080,543

TABLE 202.

BURNT CUPREOUS IRON PYRITES treated at the METAL EXTRACTION WORKS in GREAT BRITAIN. (Furnished by Mr. T. Woodward Bird, Liverpool.)

Locality.	Name of Firm.	Burnt Ore treated in 1898.	Burnt Ore treated in 1899.
		Tons.	Tons.
Newcastle-on-Tyne ...			
Birmingham			
Glasgow	Tharsis Sulphur and Copper Co., Ltd.	156,100	155,000
Cardiff			
St. Helen's			
Ditto	The United Alkali Co., Ltd....	156,502	151,217
Runcorn			
Weston			
Bolton	Harrison Blair & Co., Ltd.	1,750	2,502
Newcastle-on-Tyne	Bede Metal and Chemical Co., Ltd....	34,359	34,587
Doncaster	Morris & Co.	14,380	16,507
Leeds	Nicholson, John, & Sons, Ltd.	11,491	12,903
	Total	374,582	**372,716**

TABLE 203.

QUANTITIES of METALS EXTRACTED from the BURNT CUPREOUS PYRITES at the above WORKS.

Year.	Ore.	Metallic Copper. (Estimated.)	Extracted by Claudet's Process. (Estimated.)	
			Gold.	Silver.
	Tons.	Tons.	Ounces.	Ounces.
1899	**372,716**	**13,416**	**1,712**	**298,172**
1898	374,582	13,483	1,721	299,665

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Jet.

Jet is found in what is called the jet shale overlying the main band of ironstone of the Middle Lias of Yorkshire. It is not regularly worked, but farm labourers burrow for the mineral during stormy weather when there is no suitable occupation for them out of doors. There was none obtained in 1899.

TABLE 204.

ANNUAL OUTPUT and VALUE of JET in the United Kingdom from the Year 1883 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Lbs.	£		Lbs.	£		Lbs.	£
1880	No returns.	—	1887	1,448	289	1894	479	48
1881	„	—	1888	2,217	332	1895	168	16
1882	„	—	1889	618	124	1896	294	10
1883	126	14	1890	1,228	245	1897	84	8
1884	Nil.	—	1891	766	153	1898	Nil.	—
1885	Nil.	—	1892	929	185	1899	Nil.	—
1886	4,670	934	1893	888	177			

Lead Ore.

Lead ore was obtained last year from no less than nineteen counties and from the Isle of Man. Flintshire again heads the list. The most productive mines at the present time are Mill Close in Derbyshire, Halkyn in Flintshire, and Foxdale in the Isle of Man. The lead ore, which is almost entirely galena, occurs in veins in rocks of different ages, but especially in those of the Carboniferous epoch. Foxdale, however, is an instance of a highly productive lead vein in granite. Much of the galena contains enough silver to enhance its value.

The quantity of ore produced in this country is now less than one-half of the output eighteen years ago, and the total value slightly more than one-half of what it was at that time.

The amount of lead obtainable in smelting has been reckoned as 95 per cent. of the amount indicated by the dry assay; thus, in the case of an ore containing 80 per cent. of metal by dry assay, the actual yield has been taken at 76 per cent.

In calculating the quantity of silver obtainable from lead ores the amount of silver in ores containing less than 3 ozs. silver per ton of ore has been omitted, as in most cases it is not extracted; and it has been assumed that, on an average, ¼ oz. silver remains in each ton of desilverised pig-lead.

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TABLE 205.

SUMMARY of OUTPUT of LEAD ORE from MINES and QUARRIES, and of the QUANTITY of LEAD and SILVER obtainable therefrom.

County.	Dressed Lead Ore.	Comparison with preceding Year.	Amount of Lead obtainable in Smelting.	Amount of Silver obtainable from the Lead.	Value of Ore at the Mine.
ENGLAND.	Tons.	Tons.	Tons.	Ounces.	£
Cumberland	825	— 186	606	5,456	7,691
Derby, *including 9 tons from quarries*	4,275	— 561	3,185	—	32,058
Durham	3,361	— 1,870	2,399	23,313	32,958
Northumberland	134	+ 56	100	—	1,206
Salop	1,468	+ 144	1,152	—	14,414
Somerset...	—	— 268	—	—	—
Westmoreland	1,198	— 233	910	10,483	11,976
York	1,059	— 99	725	—	8,960
Total for England ...	12,320	— 3,017	9,077	39,252	109,263
WALES.					
Anglesey (*see* Zinc Ore)	—	—	8	569	—
Brecon	63	+ 5	48	—	600
Cardigan...	598	— 27	453	1,496	5,823
Carmarthen	933	— 143	727	4,665	7,683
Carnarvon	688	+ 381	528	7,815	7,456
Denbigh	1,983	+ 829	1,550	9,528	20,150
Flint	7,617	+ 863	6,042	40,071	79,095
Montgomery	616	— 504	479	4,760	6,476
Total for Wales	12,498	+ 1,404	9,835	68,904	127,283
SCOTLAND.					
Dumfries	1,848	=	1,453	10,164	16,654
Lanark	369	— 358	273	1,476	
Total for Scotland ...	2,217	— 358	1,726	11,640	16,654
IRELAND.					
Down	29	+ 29	23	—	228
Wicklow...	11	— 20	8	—	86
Total for Ireland	40	+ 9	31	—	314
ISLE OF MAN ...	3,924	— 24	2,883	72,131	43,270
Total for 1899 ...	**30,999**	**—1,986**	**23,552**	**191,927**	**296,784**
Total for preceding Year ...	32,985	— 2,353	25,355	211,403	267,402

The value of the 23,552 tons of Metallic Lead obtainable in 1899, according to the mean of monthly prices of Common Pig Lead in the London Market for the year, is £355,379.

The value of the 191,927 ozs. of Silver obtainable from the Lead is £21,942.

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TABLE 206.

DETAILS of OUTPUT of LEAD ORE from MINES.

Name and Situation of Mine.	Dressed Lead Ore	Percentage of Lead by Dry Assay.	Amount of Lead obtainable in Smelting.	Amount of Silver obtainable from the Lead.	Value of Ore at the Mine.
ENGLAND.					
CUMBERLAND:	Tons.		Tons.	Ounces.	£
Cashwell, Alston	58	—	45	283	7,691
Nenthead and Rodderup Fell, Alston	450	74	316	2,624	
Nentsbury, Alston	6	82	5	35	
Thornthwaite, Keswick	192	82	150	1,922	
Threlkeld, Keswick	119	79½	90	592	
Total	825	—	606	5,456	7,691
DERBYSHIRE:					
Mines producing over 5 tons of ore each:—					
Great Rake, Brassington	4,249	—	—	—	31,995
Maiden Rake, Hucklow					
Mill Close, Darley					
Mines producing under 5 tons of ore each	17	—	—	—	
Total	4,266	*	3,178	—	31,995
DURHAM:					
Green Hurth, Forest-in-Frith	181	78	134	1,775	1,810
Teesdale Mines worked by the London Lead Company:—					
Coldberry	1,230	75	876	11,993	11,676
Hudeshope Head					
Knotts Level					
Ladys Rake					
Little Eggleshope					
Lodgesyke					
Skears					
Parkin's Hush					
Wiregill					
Weardale Mines worked by the London Lead Company:—					
Cornish Hush	56	75	40	546	532
Bollyhope Burn					
Whitfield Brow					
Weardale Lead Company's Mines	1,894	75	1,349	8,999	18,940
Total	3,361	—	2,399	23,313	32,958
NORTHUMBERLAND:					
Carshields, West Allendale	87	—	65	—	1,206
Fallowfield, Hexham	47	—	35	—	
Total	134	—	100	—	1,206
SHROPSHIRE:					
Bog, Minsterley	5	79	4	—	47
Gritt, Minsterley	125	72	85	—	98
Roman Gravels, East, Minsterley	114	82	89	—	893
Snailbeach, Minsterley	1,224	83¾	974	—	12,486
Total	1,468	—	1,152	—	14,414

* Returns from the Smelters give an average of 74·5 % of lead obtained from the Derbyshire ores.

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Details of Output of Lead Ore from Mines—*continued.*

Name and Situation of Mine.	Dressed Lead Ore.	Percentage of Lead by Dry Assay.	Amount of Lead obtainable in Smelting.	Amount of Silver obtainable from the Lead.	Value of Ore at the Mine.
ENGLAND—*cont.*					
WESTMORLAND:	Tons.		Tons.	Ounces.	£
Greenside, Patterdale	1,198	80	910	10,483	11,976
YORKSHIRE (NORTH RIDING):					
Arkendale, Arkengarthdale	149	75	106	—	1,937
Old Gang, Swaledale	158	60	90	—	1,422
YORKSHIRE (WEST RIDING):					
Lolley Scarr, Pateley Bridge	728	74	512	—	5,351
Limby, Lofthouse, Pateley Bridge ...	24	74	17	—	250
Total	1,059	—	725	—	8,960
WALES.					
ANGLESEY:					
Mona, Amlwch, Lead and Silver from 53 tons of "Bluestone." (See Zinc Ore.)	—	15	7	529	—
Morfa du, Amlwch, Lead and Silver from 4 tons of "Bluestone"	—	15	1	40	—
Total	—	—	8	569	—
BRECONSHIRE:					
Nant-y-Garw, Rhayader	63	80	48	—	600
CARDIGANSHIRE:					
Bryn-yr-Afr, Goginan	205	81	158	—	2,069
Bwlchglas, Talybout	6	70	4	—	42
Esgairhir, Talybont	27	75	19	—	268
Esgairmwyn, Pontrhydfendigaid	261	80	198	1,386	2,561
East Darren, Cwm Symlog	14	80	11	110	127
Frongoch, Devil's Bridge	43	80	33	—	383
West Frongoch, Devil's Bridge	42	75	30	—	373
Total	598	—	453	1,496	5,823
CARMARTHENSHIRE:					
Carmarthen, Llangunnor	389	82	303	1,945	3,788
Nant-y-mwyn, Llandovery	544	82	424	2,720	3,895
Total	933	—	727	4,665	7,683
CARNARVONSHIRE:					
Aberllyn, Bettws-y-coed	3	80	2	—	31
Hafna, Llanrwst	100	80	76	—	1,000
Park, Llanrwst	19	80	14½	—	199
Trecastell, Conway	566	81	435½	7,815	6,226
Total	688	—	528	7,815	7,456

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Details of Output of Lead Ore from Mines—*continued.*

Name and Situation of Mine.	Dressed Lead Ore.	Percentage of Lead by Dry Assay.	Amount of Lead obtainable in Smelting.	Amount of Silver obtainable from the Lead.	Value of Ore at the Mine.
WALES—*cont.*					
DENBIGHSHIRE:	Tons.		Tons.	Ounces.	£
Dean's, Minera	2	82	1½	10	22
Llanarmon district, Llanarmon	55	75½	39½	265	476
Minera, Wrexham	1,926	82½	1,509	9,253	19,652
Total	1,983	—	1,550	9,528	20,150
FLINTSHIRE:					
East Halkyn, Holywell	352	83	277½	2,043	3,733
Great Holway, Holywell	36	81	28	389	375
Halkyn, Holywell	3,440	84	2,745	19,954	35,003
New Pant-y-ne, Holywell	19	80	14½	63	183
North Hendre, Mold	1,555½	84	1,241	6,299	17,221
Old Milwr, Holywell	163	70	108	1,277	1,619
Pantybuarth, Mold	88	82	68½	291	912
Plantation, Holywell	11	83½	9	97	128
Rhosesmor, Halkyn	93	71½	63	681	893
South Halkyn, Halkyn	1,730	84½	1,389	8,303	17,725
South Milwr, Holywell	½	75	½	—	3
Trelogan, Llanasa	129	80	98	674	1,300
Total	7,617	—	6,042	40,071	79,095
MONTGOMERYSHIRE:					
Dylife, Llanbrynmair	16	80	12	77	174
Van, Llanidloes	600	82	467	4,683	6,302
Total	616	—	479	4,760	6,476
SCOTLAND.					
DUMFRIESSHIRE:					
Queensberry, Wanlockhead, Abington ...	1,848	82¾	1,453	10,164	16,654
LANARKSHIRE:					
Leadhills, Abington	369	78	273	1,476	
Total for Scotland	2,217	—	1,726	11,640	16,654
IRELAND.					
DOWN (ULSTER):					
Newtownards	29	82	23	—	228
WICKLOW (LEINSTER):					
Glenmalure, Rathdrum	11	77	8	—	86
Luganure, „					
ISLE OF MAN.					
Foxdale, Foxdale	3,610	77	2,641	62,515	39,800
Great Laxey, Laxey Glen	158	80	120	6,448	2,066
Snaefell, Snaefell Mountain	156	82¼	122	3,168	1,404
Total	3,924	—	2,883	72,131	43,270

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TABLE 207.

OUTPUT of LEAD ORE from QUARRIES.

County.	Dressed Lead Ore.	Percentage of Lead by Dry Assay.	Amount of Lead obtainable in Smelting.	Amount of Silver obtainable from the Lead.	Value of Ore at the Quarry.
ENGLAND	Tons.		Tons.	Ounces.	£
Derby	9	—	7	—	63

TABLE 208.

ANNUAL OUTPUT and VALUE of LEAD ORE in the United Kingdom from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	73,500	1,131,907	1882	65,001	592,610	1891	43,859	356,783
1874	76,202	1,024,107	1883	56,487	474,911	1892	40,024	296,484
1875	77,746	1,202,148	1884	54,485	401,555	1893	40,808	280,539
1876	79,096	1,218,078	1885	51,302	407,600	1894	40,599	266,995
1877	80,850	1,123,952	1886	53,420	471,295	1895	38,412	273,392
1878	77,350	801,428	1887	51,563	429,137	1896	41,069	303,398
1879	66,877	688,740	1888	51,259	438,383	1897	35,338	275,409
1880	72,245	816,368	1889	48,465	429,647	1898	32,985	267,402
1881	64,702	656,725	1890	45,651	406,164	**1899**	**30,999**	**296,784**

TABLE 209.

MEAN MONTHLY PRICES of METALLIC LEAD per TON in the LONDON MARKET.

Month.	English Lead.						Foreign Lead.		
	Pig, Common.			Pig (L.B.).			Spanish.		
1899.	£	s.	d.	£	s.	d.	£	s.	d.
January	13	10	8	13	18	6	13	8	11
February	14	10	8	15	2	6	14	7	0
March	14	5	3	14	16	0	14	2	11
April	14	9	3	15	0	8	14	7	10
May	14	5	6	14	16	3	14	3	7
June	14	7	8	14	17	0	14	5	10
July	14	10	7	14	18	9	14	8	9
August	14	17	8	15	6	3	14	15	6
September	15	8	4	15	18	0	15	6	0
October	16	10	8	17	1	3	16	6	3
November	17	5	8	17	18	9	17	2	2
December	16	19	9	17	13	0	16	15	6
Highest prices	17	15	0	18	0	0	17	10	0
Lowest „	13	7	6	13	12	6	13	6	3
Mean of Monthly Prices for 1899 ...	**15**	**1**	**10**	**15**	**12**	**3**	**14**	**19**	**2**
Mean Prices for preceding Year	13	2	8	13	11	2	13	0	4

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TABLE 210.

Table showing the average Price per Ton of METALLIC LEAD in the London Market for each Year from 1873 to 1899.

Year.	English Pig.						Year.	English Pig.					
	Common.			(W.B.)				Common.			(W.B.)		
	£	s.	d.	£	s.	d.		£	s.	d.	£	s.	d.
1873	23	6	0	24	7	8	1887	12	17	0	13	3	3
1874	22	2	0	23	6	0							
1875	22	9	4	23	6	6	1888	13	18	3	15	11	3
1876	21	13	10	23	1	9	1889	13	0	10	14	6	7
1877	20	11	3	21	7	0	1890	13	7	10	14	13	0
							1891	12	8	10	13	16	0
1878	16	14	0	17	11	3	1892	10	15	1	12	0	7
1879	14	16	6	14	11	3					(L.B.)		
1880	16	7	6	17	6	3	1893	9	16	11	10	8	1
1881	14	19	3	15	11	6	1894	9	11	9	10	2	2
1882	14	7	3	15	0	3	1895	10	12	11	11	1	8
							1896	11	7	9	11	15	7
1883	12	18	0	13	9	0	1897	12	10	5	12	18	2
1884	11	6	0	11	13	10							
1885	11	10	0	11	16	10	1898	13	2	8	13	11	2
1886	13	4	9	13	12	3	**1899**	**15**	**1**	**10**	**15**	**12**	**3**

TABLE 211.

EXPORTS of BRITISH LEAD and LEAD ORE from the UNITED KINGDOM to FOREIGN COUNTRIES in the Year 1899. (Return by Board of Customs.)

Ports whence Exported.	Lead Ore.	Pig Lead.	Lead :—Rolled, Sheet, Piping, and Tubing.
	Tons.	Tons.	Tons.
London	—	15,341	13,217
Liverpool	219	510	1,449
Bristol	—	753	43
Cardiff	—	10	14
Douglas	1,300	—	—
Harwich	110	—	5
Hull	—	48	75
Manchester	—	16	51
Middlesbrough	—	12	20
Newcastle	—	3,128	1,639
Newhaven	—	—	30
Plymouth	—	—	67
Shields, North...	—	363	1,027
„ South...	—	350	596
Southampton	—	85	400
Swansea	41	74	120
Weymouth	—	—	14
Other Ports of England	—	1	1
Glasgow	—	69	750
Leith	—	1	10
Total Export for 1899	**1,670**	**20,761**	**19,528**
Total for preceding Year	49	18,665	19,410

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Exports of British Lead and Lead Ore from the United Kingdom—*continued.*

Countries to which Exported.	Lead Ore.	Pig Lead.	Lead :—Rolled, Sheet, Piping, and Tubing.
	Tons.	Tons.	Tons.
Russia : Northern Ports	—	9,464	966
Southern Ports	—	278	556
Sweden	—	353	948
Norway	—	102	488
Denmark	—	425	213
Germany	—	889	150
Holland	22	524	46
Belgium	1,398	674	125
Channel Islands	—	5	142
France	250	2,762	71
Portugal, Azores, and Madeira	—	151	25
Spain and the Canaries	—	1	31
Gibraltar	—	—	26
Italy	—	58	2
Malta	—	4	34
Greece	—	—	9
Roumania	—	9	26
Turkey	—	4	10
Egypt	—	17	58
West Coast of Africa	—	17	188
East Coast of Africa	—	29	40
British Possessions in South Africa	—	113	1,643
Mauritius	—	7	31
Persia	—	7	2
British East Indies	—	287	7,858
Java	—	3	327
Other Dutch Possessions in the Indian Seas (except Borneo and New Guinea)	—	—	6
Dutch Borneo	—	—	83
Philippine and Ladrone Islands	—	—	13
China	—	1,266	233
Hong Kong	—	100	109
Japan	—	1	2,241
Australasia : West Australia	—	1	27
South Australia	—	3	93
Victoria	—	—	96
New South Wales	—	—	107
Queensland	—	—	52
Tasmania	—	—	14
New Zealand	—	2	196
Fiji Islands	—	17	—
Island in the Pacific	—	—	16
British North America	—	1,928	1,078
United States of America	—	18	48
British West India Islands and British Guiana	—	21	67
Foreign West Indies	—	—	31
Mexico	—	8	91
Central America	—	2	3
Republic of Colombia	—	158	16
Venezuela	—	—	6
Ecuador	—	12	39
Peru	—	6	103
Chile	—	38	96
Brazil	—	434	427
Uruguay	—	29	56
Argentine Republic	—	534	152
Other Parts	—	—	14
Total Export for 1899	**1,670**	**20,761**	**19,528**
Total for preceding Year	49	18,665	19,410

TABLE 212.
EXPORTS of FOREIGN LEAD and LEAD ORE from the UNITED KINGDOM.
(Return by Board of Customs.)

Ports whence Exported.	Lead Ore.	Pig Lead and Sheet Lead.	Lead Manufactures.
	Tons.	Tons.	Cwts.
London	5,857	16,577	54
Liverpool	45	89	—
Grimsby	—	—	—
Hull	109	4	120
Newcastle	—	—	—
Southampton	—	75	—
Total Export for 1899	**6,011**	**16,745**	**174**
Total for preceding Year	13,955	16,207	118

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Exports of Foreign Lead and Lead Ore from the United Kingdom—*continued.*

Countries to which Exported.	Lead Ore.	Pig Lead and Sheet Lead.	Lead Manufactures.
	Tons.	Tons.	Cwts
Russia: Northern Ports	—	1,514	—
Southern Ports	—	644	—
Norway	—	—	—
Denmark	—	20	—
Germany	2,731	9,200	—
Holland	2	2,545	—
Belgium	3,252	2,078	—
France	—	200	—
Portugal	—	1	—
Italy	—	4	120
Greece	—	20	—
British East Indies	26	25	5
Canada: On the Atlantic	—	135	11
United States of America	—	251	—
Brazil	—	81	—
Other Parts	—	27	38
Total Export for 1899	**6,011**	**16,745**	**174**
Total for preceding Year	13,955	16,207	118

TABLE 213.

IMPORTS of LEAD and LEAD ORE into the UNITED KINGDOM in the Year 1899. (Return by Board of Customs.)

Countries whence Imported.	Lead Ore.	Pig Lead and Sheet Lead.	Lead Manufactures.
	Tons.	Tons.	Cwts.
Sweden	4	150	—
Germany	456	7,783	797
Holland	276	273	2,092
Belgium	75	807	1,079
France	1,045	302	195
Portugal	200	—	—
Spain	1,166	99,422	—
Italy	37	2	14
Turkey	1,041	—	—
British East Indies:			
Bengal	—	231	—
Straits Settlements	16	775	—
China	818	—	—
Australasia:			
West Australia	16	276	—
South Australia	13,682	17,712	—
Victoria	2,944	3,895	—
New South Wales	5,667	31,825	—
Queensland	310	620	—
Tasmania	706	—	—
New Zealand	314	350	—
Canada	11	160	—
United States of America	30	32,669	520
Peru	327	12	—
Chile	346	658	—
Argentine Republic	33	—	—
Other Parts	266	455	39
Total Imports for 1899	**29,786**	**198,377**	**4,736**
Total for preceding Year	43,757	194,479	8,244

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Imports of Lead and Lead Ore into the United Kingdom—*continued.*

Port into which Imported.	Lead Ore.	Pig Lead and Sheet Lead.	Lead Manufactures.
	Tons.	Tons.	Cwts.
London	15,042	103,240	2,832
Liverpool	2,075	24,949	358
Bristol	688	3,129	123
Cardiff	27	—	—
Dover	—	—	1
Folkestone	—	—	22
Goole	—	—	18
Grimsby	—	—	26
Hull	393	902	783
Llanelly	25	—	—
Manchester	—	12,315	56
Middlesbrough	—	208	—
Newcastle	6,883	6,476	8
Newhaven	3	—	74
Plymouth	—	1	9
Shields, North	3	23,513	—
„ South	1,820	10,742	7
Southampton	—	29	—
Swansea	2,825	258	—
Weymouth	2	1	—
Leith...	—	1,600	60
Glasgow	—	10,115	194
Grangemouth	—	—	138
Dublin	—	899	—
Belfast	—	—	27
Total Imports for 1899	**9,786**	**198,377**	**4,736**
Total for preceding Year	43,757	194,479	8,244

TABLE 214.

QUANTITY of LEAD obtainable in the UNITED KINGDOM from BRITISH and FOREIGN ORES, QUANTITY Imported and Exported, and AMOUNT available for HOME CONSUMPTION.

Year.	Lead obtainable from British Ores.	Lead imported and Lead obtainable from Foreign Ores.	British and Foreign Lead Exported, including Lead in Ores Exported.	Available for Home Consumption.
	Tons.	Tons.	Tons.	Tons.
1899	**23,552**	**222,206**	**63,095**	**182,663**
Preceding Year ...	25,355	229,485	65,483	189,357

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List of Lead Smelters.

Owners of Smelting Works.	Situation of Works.	Postal Address
DERBYSHIRE:		
Fairburn, J., & Co.	Stoney Middleton...	Middleton Dale, Sheffield.
Moore, J. H.	Brough	Brough Lead Works, Bradwell, viâ Sheffield.
Wass & Son, Trustees of	Lea, Derby... ...	Lea Lead Works, Matlock Bath, Derby.
DURHAM:		
Governor & Co., for Smelting down Lead, &c. (London Lead Co.) (Desilverizers)	Egglestone... ...	Egglestone, viâ Darlington.
Walton, John, & Co.	Castleside	Healeyfield Lead Works, Castleside, Consett, R.S.O., Durham.
Weardale Lead Co., Ltd.	Rookhope	Rookhope, Eastgate, R.S.O., Co. Durham.
FLINTSHIRE:		
North Wales Lead Works, Ltd.	Llanerchymor near Holywell.	Holywell.
Walkers, Parker, & Co., Ltd. (Desilverizers).	Bagillt	Dee Bank Lead Works, Bagillt, Holywell.
GLAMORGANSHIRE:		
Llansamlet Smelting Works, Co. (*also* Silver Smelters).	Six Pits Junction...	Swansea.
Stephens, James	Swansea	Black Vale Copper and Tin Smelting Works, Swansea.
Vivian & Sons (*also* Silver Ore, Copper, and Spelter Smelters).	Swansea	White Rock Works, Swansea. Hafod Works, Swansea. Morriston Works, Swansea.
GLOUCESTERSHIRE:		
Sheldon, Bush, and Patent Shot Co. (Desilverizers).	Bristol	Blackswarth, Cheese Lane, and Redcliffe Hill, Bristol.
LANCASHIRE:		
Quirk, Barton & Burns (*also* Lead Desilverizers and Silver Refiners).	St. Helen's	St. Helen's. London Office: 9, Gracechurch Street, E.C.
St. Helen's Metal Recovery Co., Ltd. ...	St. Helen's	Atlas Court, Pocket Nook, St. Helen's.
MIDDLESEX:		
Clark, F. A., & Son	Hammersmith ...	Phœnix Lead Mills, Marlborough Wharf, Hammersmith, W.
Locke, Lancaster, and W. W. and R. Johnson & Sons, Ltd. (Desilverizers).	Poplar	Bridge Road, Poplar, London, E., and Leadenhall Buildings, London, E.C.
NORTHUMBERLAND:		
Cookson & Co.	Willington Quay ...	Willington Quay Lead Smelting and Antimony Works, Willington Quay, Newcastle-on-Tyne.
Cookson & Co. (Refiners and Desilverizers)	Willington Quay ...	Howdon Lead Works, Willington Quay, Newcastle-on-Tyne.
Locke, Blackett, & Co., Ltd. (Desilverizers)	Gallowgate and St. Anthony's.	Lead Works, Newcastle-on-Tyne.
Walkers Parker, & Co., Ltd. (Desilverizers)	Elswick	Elswick, Newcastle-on-Tyne.
SOMERSETSHIRE:		
C. Pass and Son, Ltd.	Bristol	Bedminster, Bristol.
St. Cuthbert's Lead Works, Ltd.	Priddy, Wells ...	Offices: Priddy, Wells and 110, Cannon Street, London, E.C.
SURREY:		
Enthoven, Henry John, and Sons (Desilverizers).	Rotherhithe ...	Rotherhithe, Surrey, S.E.

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List of Lead Smelters—*continued.*

Owners of Smelting Works.	Situation of Works.	Postal Address.
WARWICKSHIRE:		
Jones, R., & Co.	Deritend	Stone Yard, Deritend, Birmingham.
WESTMORELAND:		
Greenside Mining Co., Ltd. (Desilverisers)	Patterdale	Glenridding, Penrith.
YORKSHIRE:		
Apedale Mining Co....	Apedale, near Redmire.	T. Cradock, Agent, Leyburn, R.S.O.
G. T. Gilpin Brown, Esq., C. B. Lead Mines	Arkengarthdale ...	Arkengarthdale, Richmond, Yorks.
Jubb, T. G. & J.	Hunslet	Brandling Street, Hunslet, Leeds.
Old Gang Lead Mining Co., Ltd.	Old Gang, Reeth ...	Fremington, Richmond, Yorks.
Yorke, Thomas Edward	Pateley Bridge ...	Heathfield Smelt Mills, Pateley Bridge Yorks.
SCOTLAND:		
Alexander Fergusson and Co., Ltd. ...	Ruchill Wharf, Forth and Clyde Canal, near Maryhill.	36 to 48, McAlpine Street, Glasgow.
Buccleuch, Duke of (Desilveriser) ...	Wanlockhead ...	Wanlockhead, R.S.O., Abington, N.B.
Leadhills Silver Lead Mining and Smelting Co., Ltd.	Leadhills	Lead Hills, Abington, R.S.O., Lanarkshire.
IRELAND:		
Mining Company of Ireland and Strachan Bros., Ltd.	Ballycorus, Golden Ball, Co. Dublin; Ringsend Lead Works, Dublin; Victoria Lead Works, Loftus Lane, Dublin.	Loftus Lane, Dublin.

Lignite.

The lignite obtained in 1894 came from a seam of Lower Tertiary age at Bovey Tracey, in Devonshire; none has been worked since 1894.

TABLE 215.

ANNUAL OUTPUT and VALUE of LIGNITE in the UNITED KINGDOM from the Year 1887 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£
1887	1,764	793	1894	334	83
1888	971	437	1895	Nil.	—
1889	947	284	1896	Nil.	—
1890	2,630	767	1897	Nil.	—
1891	4,664	1,360	1898	Nil.	—
1892	4,247	1,062	1899	Nil.	—
1893	3,264	816			

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Limestone (exclusive of Chalk).

Limestone is very widely distributed throughout the United Kingdom; it is quarried in three-fourths of the counties in England, five-sixths of the counties in Wales, half the counties of Scotland, and in nearly every county in Ireland. Even without taking chalk into account, it is one of the most important minerals which is quarried in this country.

TABLE 216.

COUNTY OUTPUT of LIMESTONE (exclusive of Chalk) from MINES and QUARRIES.

County	Quantity.			Total Value.
	Mines.	Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Bedford	—	2,750	2,750	880
Berks	—	—	—	—
Buckingham	—	1,193	1,193	198
Cambridge	—	750	750	97
Chester	5,486	—	5,486	686
Cornwall	—	4,368	4,368	488
Cumberland	—	524,417	524,417	45,034
Derby	4,963*	1,756,307	1,761,270	147,698
Devon	—	527,026	527,026	41,464
Dorset	8,779	510,435	519,214	86,898
Durham	—	1,944,207	1,944,207	161,363
Gloucester	589	170,681	171,270	17,004
Hants	—	320	320	320
Hereford	—	13,646	13,646	1,569
Kent	—	149,941	149,941	17,106
Lancaster	—	600,480	600,480	42,789
Leicester	12,854	129,222	142,076	18,448
Lincoln	—	44,422	44,422	8,569
Monmouth	—	79,323	79,323	6,519
Norfolk	—	1,402	1,402	252
Northampton	187	154,118	154,305	14,716
Northumberland	4,745	98,783	103,528	15,027
Nottingham	—	91,485	91,485	14,912
Oxford	—	10,442	10,442	1,772
Rutland	—	1,687	1,687	2,530
Salop	3,799	168,852	172,651	11,071
Somerset	2,643	477,515	480,158	53,861
Stafford	46,963	266,768	313,731	24,160
Surrey	—	6,629	6,629	1,037
Warwick	—	227,959	227,959	34,249
Westmoreland	—	71,492	71,492	6,424
Wilts	165,488	31,307	196.795	100,716
Worcester	47,889	1,132	49,021	10,065
York	—	997,915	997,915	110,240
Total	304,385	9,066,974	9,371,359	998,162
WALES:				
Anglesey	—	61,557	61,557	8,979
Brecon	—	300,151	300,151	41,892
Carmarthen	—	110,066	110,066	8,740
Carnarvon	—	418,821	418,821	37,589
Denbigh	—	204,599	204,599	17,218
Flint	811	39,472	40,283	4,438
Glamorgan	—	681,910	681,910	54,491
Merioneth	—	1,067	1,067	160
Montgomery	—	9,371	9,371	469
Pembroke	—	22,998	22,998	2,290
Radnor	—	35,372	35,372	1,498
Total	811	1,885,384	1,886,195	177,764

* Including 2,587 tons of calc spar.

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County Output of Limestone from Mines and Quarries—*continued.*

County.	Quantity.			Total Value.
	Mines.	Quarries.	Total.	
SCOTLAND:	Tons.	Tons.	Tons.	£
Aberdeen	—	2,766	2,766	99
Argyll	—	6,072	6,072	682
Ayr	—	14,369	14,369	3,332
Banff	—	38,355	38,355	5,819
Dumbarton	11,398	—	11,398	2,280
Dumfries	2,000	17,600	19,600	3,426
Edinburgh	154,714	47,985	202,699	48,187
Fife	75,039	8,677	83,716	22,484
Haddington	—	25,764	25,764	3,865
Lanark	48,818	7,517	56,335	13,560
Linlithgow	1,930	—	1,930	507
Peebles	—	2,473	2,473	124
Perth	—	1,950	1,950	202
Renfrew	2,698	38,059	40,757	4,345
Roxburgh	—	15	15	2
Stirling	19,518	—	19,518	3,904
Total	316,115	211,602	527,717	112,818
IRELAND:				
Antrim	—	241,575	241,575	18,288
Armagh	—	4,620	4,620	214
Carlow	—	4,628	4,628	340
Cavan	—	220	220	22
Cork	—	44,318	44,318	3,200
Donegal	—	6,035	6,035	776
Down	—	5,330	5,330	615
Dublin	—	58,010	58,010	5,355
Fermanagh	—	3,261	3,261	199
Galway	—	749	749	1,035
Kerry	—	12,496	12,496	1,449
Kildare	—	2,379	2,379	508
Kilkenny	—	11,439	11,439	923
King's County	—	5,350	5,350	896
Limerick	—	21,761	21,761	1,429
Londonderry	—	4,112	4,112	394
Longford	—	1,257	1,257	192
Louth	—	8,032	8,032	528
Mayo	—	1,320	1,320	89
Meath	—	8,198	8,198	3,924
Monaghan	—	6,500	6,500	368
Queen's County	—	4,460	4,460	222
Sligo	—	3,630	3,630	288
Tipperary	—	21,173	21,173	1,849
Tyrone	—	6,157	6,157	635
Waterford	—	5,770	5,770	297
Westmeath	—	100	100	5
Wexford	—	15,467	15,467	1,402
Total	—	508,347	508,347	45,442
ISLE OF MAN	—	9,272	9,272	881
Total for 1899	**621,311**	**11,681,579**	**12,302,890***	**1,335,067**
Total for preceding Year	594,258	11,386,320	11,980,578	1,256,154

* Including 2,587 tons of calc spar.

Magnesium.

(No information as to quantity of Magnesium produced is obtainable.)

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Manganese Ore.

The output of manganese ore continues small, and the quantity raised last year only amounted to 415 tons. As long as large supplies of far richer ore can be obtained with ease from Chili, India, Turkey, and Russia, it is unlikely that our deposits will be extensively worked.

The ore of North Wales occurs in the form of a bed of earthy carbonate, intercalated among the grits and conglomerates of the Cambrian period. It is used in the manufacture of spiegeleisen and ferro-manganese, and contains from 25 to 32 per cent. of metal.

TABLE 217.

OUTPUT FROM MINES.

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
ENGLAND.			
DERBYSHIRE:		Tons.	£
Brown Edge, Winster	Joshua Moseley	87	44
Mount Pleasant, Smerril Grange ...	J. G. Armitage		
WALES.			
MERIONETHSHIRE:			
Cell-fechan, Barmouth	Mrs. Edith M. Abraham...	28	17
Cwm-mawr, Llanbedr	William Lewis	5	3
Ffridd Tyddyn-du, Llanbedr	Ellis Pritchard	148	93
Hendre, Llanbedr	F. B. Haigh	147	92
Total	... ...	328	205
Total for 1899 ...	... ...	**415**	**249**
Total for preceding Year ...	... ...	231	200

TABLE 218.

Table showing the Annual Production and Value of MANGANESE ORE in the United Kingdom from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	8,671	57,766	1882	1,548	3,907	1891	9,476	6,213
1874	5,778	29,200	1883	1,287	2,976	1892	6,078	4,434
1875	3,205	15,906	1884	909	1,430	1893	1,336	762
1876	2,797	9,783	1885	1,688	2,411	1894	1,809	740
1877	3,039	7,958	1886	12,763	10,893	1895	1,273	681
1878	1,586	3,121	1887	13,777	11,110	1896	1,080	613
1879	816	1,515	1888	4,342	1,934	1897	599	351
1880	2,839	5,601	1889	8,852	6,478	1898	231	200
1881	2,884	6,441	1890	12,444	6,733	**1899**	**415**	**249**

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TABLE 219.

MANGANESE ORE Imported into the UNITED KINGDOM. (Return by Board of Customs.)

Ports into which Imported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
London	2,074	7,641	555	3,914
Liverpool	37,153	94,114	44,994	109,309
Bristol	—	—	4	16
Cardiff	550	375	—	—
Chester	12,533	19,450	5,763	13,466
Fleetwood	38,099	76,041	77,455	154,542
Gloucester	12	24	—	—
Goole	11	28	—	—
Grimsby	1	6	22	220
Hartlepool	2	6	—	—
Hull	9	180	4	21
Manchester	2,771	5,221	4,610	7,446
Middlesbro'	41,109	87,433	71,956	165,743
Newcastle	230	682	620	1,547
Newport	16,580	41,050	50,788	125,970
Shields, North	—	—	300	850
Southampton	7	25	1	35
Swansea	—	—	100	800
Leith	—	—	50	350
Dundee	81	400	—	—
Glasgow	2,700	7,425	—	4
Grangemouth	5	10	386	1,188
Total	153,927	340,111	**257,608**	**585,421**

Countries whence Imported.				
	Tons.	£	Tons.	£
From Russia	78,170	178,865	140,698	313,140
Germany	542	2,885	761	3,992
Holland	2,003	4,981	1,128	3,062
Belgium	50	203	182	831
France	5,183	8,298	5,579	14,007
Portugal	1,602	3,219	944	1,839
Spain	4,771	8,171	7,251	12,834
Greece	5,400	7,350	19,384	43,598
Turkey	8,400	18,698	5,343	12,825
British East Indies	24,481	48,803	21,005	41,176
Java	2,706	6,243	913	2,170
Japan	1,436	5,085	1,967	4,815
Australasia	8	30	40	134
Peru	1,909	5,011	2,210	5,048
Chili	8,605	20,913	18,899	45,944
Brazil	8,660	21,353	31,298	80,026
Other countries	1	3	6	80
Total	153,927	340,111	**257,608**	**585,421**

Mica.

Mica is obtained as a by-product in the preparation of china clay.

TABLE 220.

OUTPUT from QUARRIES.

County.	Quantity.	Value at the Quarries.
ENGLAND:	Tons.	£
Cornwall	650	244
Total for preceding Year	907	454

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Mineral Oil. *See* PETROLEUM.

Nickel Ore. *See also under* COBALT.

Nickel mining was started in Kirkcudbrightshire in the year 1897 by the Palnure United Exploring Co., Ltd., when 300 tons of ore were raised, the value being estimated at £300. None was obtained in 1898 or 1899.

Ochre, Umber, &c.

Under this heading are placed the oxides of iron and manganese used as pigments. Some of the ochre of Anglesey is obtained from a native earth dug up from shallow pits, and a considerable amount is deposited by the ferruginous water from the copper precipitation pits, when exposed to the action of the atmosphere in shallow ponds.

TABLE 221.

SUMMARY of OUTPUT from MINES and QUARRIES.

County.	Quantity.			Value.
	Mines.	Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Cornwall	19	400	419	158
Derby	275	—	275	206
Devon	4	1,600	1,604	1,208
Gloucester	395	1,500	1,895	1,431
Somerset	1,108	8,758	9,866	7,761
TOTAL FOR ENGLAND	1,801	12,258	14,059	10,764
WALES:				
Anglesey	1,150	—	1,150	1,710
IRELAND:				
Wicklow	1,105	—	1,105	1,105*
Total for 1899	**4,056**	**12,258**	**16,314**	**13,579**
Total for preceding Year	2,800	17,027	19,827	13,003

* Value estimated.

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TABLE 222.

DETAILS of OUTPUT from MINES.

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
CORNWALL:		Tons.	£
Binner, Crowan	Binner Ochre Co.	5	38
Indian Queens, St. Columb	Indian Queens Manufacturing Co. ...	14	
Total		19	38
DERBYSHIRE:			
Brownedge, Winster	J. Moseley		
Doglow, Hopton... ... (*Ochre*)	Joseph Repton		
Mount Pleasant, Smerril Grange (*Umber*)	J. G. Armitage	275	206
Pipe, Cromford	T. Worthey		
Royal Oak, Cromford ... (*Ochre*)	Holmes & Co.		
Total		275	206
DEVONSHIRE:			
Whitstone, Brentor	Whitstone Mining Co.	4	8
GLOUCESTERSHIRE:			
Bow Pit, Milkwall	F. T. Burgess, Ltd.	42	27
High Meadow, Coleford (*Red Oxide of Iron*).	High Meadow Iron Co., Ltd.	353	1,029
Total		395	1,056
SOMERSETSHIRE:			
Red House, Winford (*Red Oxide of Iron*).	Winford Iron Ore and Redding Co., Ltd.	450	
Regil, Winford ... ... (*Ochre*)	Hemingway & Co.	—	1,035
Ditto ... (*Red Oxide of Iron*)	Ditto	658	
Total		1,108	1,035
WALES.			
ANGLESEY:			
Mona, Amlwch ... ... (*Ochre*)	Mona and Parys Mines, Ltd.	1,000	1,450
Parys, Amlwch ... ... „	Ditto	150	260
Total		1,150	1,710
IRELAND.			
LEINSTER, Co. WICKLOW:			
Cronebane & Tigroney, Ovoca (*Ochre*)	A. Macgregor	1,105	1,105°

° Value estimated.

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TABLE 223.

Annual Output and Value of OCHRE and UMBER in the United Kingdom from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	6,368	5,410	1882	8,873	16,361	1891	13,602	20,103
1874	7,122	9,478	1883	17,166	25,959	1892	12,131	16,782
1875	5,316	7,185	1884	9,191	18,976	1893	10,534	13,880
1876	3,805	4,478	1885	13,328	23,459	1894	8,516	14,040
1877	5,074	4,488	1886	12,392	22,185	1895	7,625	16,989
1878	4,415	4,038	1887	8,293	15,789	1896	9,891	24,688
1879	3,974	3,437	1888	7,573	13,387	1897	14,422	12,997
1880	6,126	11,512	1889	10,494	15,532	1898	19,827	13,003
1881	7,966	12,286	1890	19,068	17,475	**1899**	**16,314**	**13,579**

Oil Shale.

The Oil Shale industry of Scotland is of no small importance, and the quantity worked has increased very considerably during the last twenty years. The mineral is obtained chiefly in Edinburghshire and Linlithgowshire from seams in the Calciferous Sandstone at the base of the Carboniferous rocks.

TABLE 224.

OUTPUT from MINES.

County.	Quantity.	Average Price per Ton at the Mine.	Value at the Mines.
ENGLAND.	Tons.	s. d.	£
Stafford, North	200	5 0	50
WALES.			
Flint	2,375	7 6	891
SCOTLAND.			
Ayr	1,841		
Edinburgh	628,430		
Lanark	76,246		
Linlithgow	1,499,378	5 0	552,062
Stirling	2,288		
Sutherland	66		
Total...	2,208,249	—	552,062
Total for 1899	**2,210,824**	—	**553,003**
Total for preceding Year	2,137,993	—	534,498

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TABLE 225.

Annual Production and Value of OIL SHALE in the United Kingdom from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	524,095	262,047	1882	1,030,915	310,685	1891	2,361,119	707,177
1874	362,747	181,373	1883	1,167,943	299,676	1892	2,089,937	522,484
1875	437,774	218,887	1884	1,518,871	386,780	1893	1,956,520	489,130
1876	603,538	301,769	1885	1,770,413	447,302	1894	1,986,385	496,596
1877	801,701	400,850	1886	1,728,503	435,963	1895	2,246,865	561,716
1878	788,704	394,352	1887	1,411,378	355,085	1896	2,419,525	604,881
1879	783,748	391,824	1888	2,076,469	519,074	1897	2,223,745	555,936
1880	837,805	418,902	1889	2,014,860	503,715	1898	2,137,993	534,498
1881	958,255	479,127	1890	2,212,250	608,369	**1899**	**2,210,824**	**553,003**

Petroleum.

Petroleum is not absolutely wanting in Great Britain, but at the present time it is obtained only in small quantities in North Staffordshire, although it has been found elsewhere.

TABLE 226.

OUTPUT from MINES.

County.	Quantity.	Average Price per Ton at the Mine.	Value at the Mines.
	Tons.	£ s. d.	£
Staffordshire, North	5	2 7 6	12
Total for 1899	**5**	—	**12**
Total for preceding Year	6	—	14

TABLE 227.

Annual Output and Value of PETROLEUM in the United Kingdom from the Year 1886 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£
1886	43	129	1893	260	488
1887	66	99	1894	49	92
1888	35	—	1895	15	28
1889	30	45	1896	12	22
1890	35	52	1897	12	29
1891	100	150	1898	6	14
1892	218	409	**1899**	**5**	**12**

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TABLE 228.

IMPORTS of PETROLEUM into the UNITED KINGDOM. (Return by Board of Customs.)

Countries whence Imported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
	Gallons.	£	Gallons.	£
From Russia	46,012,011	645,241	69,816,972	1,038,986
„ United States	171,561,363	3,023,786	166,192,455	3,437,937
„ Other Countries	1,676,165	64,605	4,137,940	98,066
Total	219,249,539	3,733,632	**240,147,367**	**4,574,989**

Phosphate of Lime.

(COPROLITES and PHOSPHATIC NODULES.)

Competition from other countries possessing deposits which can be more cheaply worked has greatly interfered with the British Phosphate industry, and this trade is evidently dying a lingering death. The mineral is obtained chiefly from beds in the Cretaceous rocks, viz., from the top of the Lower Greensand in Bedfordshire and the base of the Chalk Marl in Cambridgeshire. The phosphate beds in Suffolk belong to the Crag.

With one exception none of the coprolite pits exceed 20 feet in depth ; consequently the majority escape the provisions of the Quarries Act, and the owners are not compelled to send in returns. The total output from pits not under the Quarries Act is estimated to be 1,425 tons ; this figure is based upon returns furnished by the courtesy of the railway companies which traverse the eastern counties.

TABLE 229.

OUTPUT of PHOSPHATE of LIME.

Name and Situation of Workings.	Owner.	Geological Formation.	Quantity.	Value.
ENGLAND.			Tons.	£
BEDFORDSHIRE:				
Potton	Henry Coningsby ...	Lower Greensand ...	1,118*	—
Sandy Heath	... ...	Ditto ...		
Stanbridge, Leighton Buzzard ...	H. Coningsby, Melbourne	Ditto ...		
CAMBRIDGESHIRE:				
Barrington, near Shepreth ...	Clark and Coote ...	Upper Greensand ... (Base of Chalk marl.)	307*	—
Bassingbourn	E. C. Colchester ...	Ditto ...		
Burwell, Cambridge	G. H. Colchester ...	Ditto ...		
Harlton	J. and W. Whitehurch ...	Ditto ...		
Hampton, Great Shelford ...	E. C. Colchester ...	Ditto ...		
Horningsea, Cambridge	S. Fison	Ditto ...		
Stretham, Ely	S. Fison, Thetford ...	Ditto ...		
Thrumpington, Cambridge ...	E. C. Colchester ...	Ditto ...		
Hauxton Cement Works, Cambridge (under the Quarries Act).	... ...	... ...	21	—
Total for 1899			**1,446***	**2,529**
Total for preceding Year			1,550*	2,713

* Quantity estimated from Railway Returns.

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TABLE 230.

ANNUAL OUTPUT and VALUE of PHOSPHATE of LIME in the UNITED KINGDOM from the Year 1874 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	No returns	—	1882	49,550	97,600	1891	10,000	20,000
1874	149,654	388,290	1883	49,580	101,729	1892	12,200	22,250
1875	250,122	628,000	1884	51,866	103,976	1893	3,300	5,771
1876	258,150	625,000	1885	30,000	50,000	1894	700	1,277
1877	69,006	200,000	1886	20,000	31,500	1895	2,500	4,375
1878	54,000	150,000	1887	9,894	15,830	1896	3,000	5,250
1879	34,000	73,750	1888	22,500	43,312	1897	2,000	3,500
1880	30,500	70,950	1889	20,000	38,250	1898	1,550	2,713
1881	31,500	86,628	1890	18,000	29,500	**1899**	**1,446**	**2,529**

TABLE 231.

COPROLITES conveyed by Railway.

Name of Railway Company.	Quantity.
	Tons.
Great Eastern Railway, from stations in Cambridgeshire and Suffolk...	78
Great Northern Railway, from stations in Bedfordshire and Cambridgeshire	129
London and North-Western Railway, from stations in Bedfordshire	968
Midland Railway, from Henlow to Royston	Nil.
Total	1,175

TABLE 232.

IMPORTS of PHOSPHATE of LIME. (Return by Board of Customs.)

Countries whence Imported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
Holland	6,706	8,076	5,477	5,392
Belgium	68,954	95,124	76,210	99,652
France	49,238	63,045	49,464	66,984
Algeria	88,000	131,885	76,196	121,744
Tunis	5	10	9,770	18,343
United States of America ...	105,985	179,645	196,615	357,571
Dutch West India Islands ...	7,415	16,652	6,237	12,779
French Guiana	1,200	3,600	—	—
British North America	972	1,903	—	—
Other Countries	2,135	2,482	139	475
Total	330,610	502,422	**420,108**	**682,940**

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Plumbago.

No plumbago was obtained in the United Kingdom during 1899.

Potassium.

(No information as to quantity of Potassium produced is obtainable.)

Pyrites. *See* Arsenical Pyrites, Copper Ore, and Iron Pyrites.

Quartzite. *See* Sandstone.

Quicksilver.

No Quicksilver is produced in the United Kingdom.

TABLE 233.

IMPORTS of QUICKSILVER into the UNITED KINGDOM in the Year 1899.
(Return by Board of Customs.)

Countries whence Imported.	Quantity.	Value.
	Lbs.	£
Sweden	7,000	600
Germany	350	46
France	164	18
Spain	3,435,840	369,296
Italy	433,830	45,470
Total for 1899	**3,877,181**	**415,430**
Total for preceding Year	4,092,247	388,176

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TABLE 234.

EXPORTS of QUICKSILVER from the UNITED KINGDOM in the Year 1899.
(Return by Board of Customs.)

Countries to which Exported.	Quantity.	Value.
	Lbs.	£
Russia	3,825	452
Sweden	1,500	175
Norway	375	42
Denmark	2,700	304
Germany	134,400	14,700
Holland	8,398	938
Belgium	192,655	19,026
Channel Islands	6,530	738
France	243,233	26,738
Portugal	12,872	1,424
Spain	10,215	1,121
Italy	—	—
Turkey, European	525	62
Turkey, Asiatic	450	53
Egypt	1,575	151
Morocco	300	35
Cape of Good Hope	23,400	2,352
Natal	3,300	356
West Coast of Africa	1,394	156
East Coast of Africa, Portuguese Possessions	33,525	3,603
British East Indies: Bombay	23,325	2,524
Madras	21,000	2,270
Bengal	52,350	5,687
Burmah	—	—
Straits Settlements	450	56
Hong Kong	1,073,100	117,724
Japan	150	20
Australasia: West Australia	64,339	6,949
South Australia	300	36
Victoria	44,165	4,820
New South Wales	9,900	1,053
Queensland	43,215	4,777
Tasmania	—	—
New Zealand	4,725	498
Canada	9,675	1,035
British West India Islands	1,784	197
Dutch Guiana	1,125	122
British Guiana	15,455	1,721
Mexico	263,570	29,714
Nicaragua	1,875	206
Republic of Colombia	11,823	1,279
Venezuela	750	86
Peru	23,946	2,623
Chili	37,125	3,991
Brazil	19,683	1,960
Uruguay	150	16
Argentine Republic	4,425	517
Other Countries	8,410	909
Total for 1899	**2,417,987**	**263,226**
Total for preceding Year	2,551,001	240,900

Salt.

Most of the salt is produced from brine, principally in Cheshire, and also in Durham, Lancashire, Staffordshire, Worcestershire, and Yorkshire. Rock-salt is worked in Cheshire, Lancashire, and in County Antrim, but the output of the salt mines is small compared with the output of the brine pits. In some cases the brine flows through pipes to the alkali works and is converted directly into soda. In Ireland 10,151 tons of white salt, valued at £6,822, were manufactured from rock-salt obtained from mines during the year 1899, the rock-salt being dissolved in sea water when available.

The list of brine wells formerly published in the "Mineral Statistics" now appears as an appendix to the List of Quarries.

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TABLE 235.

SUMMARY of the OUTPUT of ROCK-SALT, WHITE SALT made from BRINE, and SALT contained in BRINE used for making ALKALI.

County.	Total Quantity of Salt. (1.) and (2.)	Comparison with preceding Year.	Total Value.
ENGLAND:	Tons.	Tons.	£
Chester and Stafford...	1,233,858	+ 9,560	439,408
Lancaster	220,327	+ 23,839	
Durham	197,610	+ 3,231	93,868
Worcester	171,562	— 7,074	77,364
York	44,481	— 168	20,215
Total for England...	1,867,838	+ 29,388	630,855
IRELAND:			
Antrim...	47,055	+ 6,840	13,319
Total for 1899	**1,914,893**	**+ 36,228**	**644,174**
Total for preceding Year... ...	1,878,665	— 24,828	620,115

(1.) ROCK-SALT.

TABLE 236.

OUTPUT of ROCK-SALT from MINES.

County.	Quantity.	Comparison with preceding Year.	Value.
ENGLAND:	Tons.	Tons.	£
Chester...	44,832	— 22,291	20,514
Lancaster	99,405	+ 23,033	
	144,237	+ 742	
IRELAND:			
Antrim	34,773	— 4,502	5,896
Total for 1899	**179,010**	**— 3,760**	**26,410**
Total for preceding Year... ...	182,770	+ 692	34,360

(2.) SALT from BRINE.

TABLE 237.

QUANTITY and VALUE of SALT produced from BRINE, or contained in BRINE sent to ALKALI WORKS.

County.	Quantity.	Comparison with preceding Year.	Value.
ENGLAND:	Tons.	Tons.	£
Chester and Stafford...	1,189,026	+ 31,851	418,894
Lancaster	120,922	+ 806	
Durham	197,610	+ 3,231	93,868
Worcester	171,562	— 7,074	77,364
York	44,481	— 168	20,215
IRELAND:			
Antrim	12,282	+ 11,342	7,423
Total for 1899	**1,735,883**	**+ 39,988**	**617,764**
Total for preceding Year... ...	1,695,895	— 25,519	585,755

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TABLE 238.

ROCK-SALT conveyed from the CHESHIRE WORKS by RAILWAY and NAVIGATION COMPANIES.

Name of Railway or Navigation Company.	1898. Quantity.	1899. Quantity.
	Tons.	Tons.
Cheshire Lines Railway (Return furnished by Mr. D. Meldrum):		
From Northwich	6,984	6,501
„ Winsford	Nil	Nil
Total	6,984	6,501
London and North-Western Railway (Return furnished by Mr. Frank Ree):		
From Middlewich	Nil	Nil
„ Northwich	7,509	6,011
North Staffordshire Railway (Return furnished by Mr. W. D. Phillipps):		
From Northwich Canal	541	276
Weaver Navigation (Return furnished by Mr. E. S. Inman):		
From Northwich	47,156	29,304
„ Winsford	93	Nil
Total	47,249	29,304
Rock-salt carted Inland (furnished by Mr. Thomas Ward, Northwich)	30	50
Total	62,313	**42,142**

TABLE 239.

WHITE SALT conveyed from the CHESHIRE WORKS by RAILWAY and NAVIGATION COMPANIES, &c., and by ROAD.

Name of Railway or Navigation Company.	1898. Quantity.	1899. Quantity.
	Tons.	Tons.
Manchester Ship Canal Co. (Bridgwater Canal) (Return furnished by Mr. W. H. Collier, General Manager, Chester Road, Manchester):		
To River Mersey, from Northwich	3,435	5,056
„ Inland „ „	23,142	23,914
„ River Mersey „ Middlewich	1,022	1,417
„ Inland „ „	1,898	2,658
„ River Mersey „ Wheelock District	Nil	Nil
„ Inland „ „	39	60
„ River Mersey from works near Runcorn Docks (Brine piped from Northwich)	25,012	23,938
„ „ „ „ (*by Rail*)	34,833	36,037
„ Inland „ „	1,831	1,794
Total	91,212	94,874
Cheshire Lines Railway (Return furnished by Mr. D. Meldrum, Manager, Central Station, Liverpool). Being in addition to the tonnage over the London and North-Western Lines.		
From Northwich	21,343	27,454
„ Winsford	18,282	16,658
„ Winnington	214	260
Total	39,839	44,372
London and North-Western Railway (Return furnished by Mr. Frank Ree, Chief Goods Manager, Euston Station). Being in addition to the tonnage over the Cheshire Lines.		
From Northwich	17,500	17,768
„ Middlewich	36,368	37,087
„ Winsford	96,617	90,053
Total	150,485	144,908
North Staffordshire Railway, Wheelock (Return furnished by Mr. W. D. Phillipps, Traffic Manager, Stoke-on-Trent).		
From Wheelock District:		
To places off North Staffordshire Railway	19,792	21,556
„ Local Stations	976	891
„ places off North Staffordshire Canal	6,310	5,264
Total	27,078	27,711

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White Salt conveyed from the Cheshire Works by Railway and Navigation Companies, &c., and by Road—*continued.*

Name of Railway or Navigation Company.	1898. Quantity.	1899. Quantity.
	Tons.	Tons.
From Middlewich District, not conveyed over Bridgwater Canal	36,448	36,349
„ Northwich Canal	42,678	49,318
Total	79,126	85,667
Weaver Navigation (Return furnished by Mr. E. S. Inman, General Manager, Northwich).		
From Winsford	415,126	372,700
„ Northwich	142,673	168,329
Total	557,799	541,029
Salt carted Inland (furnished by Mr. Thomas Ward, Northwich)	1,350	1,327
Total quantity conveyed	946,889	**939,888**

No WHITE SALT was conveyed from the STAFFORDSHIRE WORKS by RAILWAY and CANAL during the Year 1899.

TABLE 240.

QUANTITY and VALUE of SALT (ROCK and WHITE) EXPORTED from the UNITED KINGDOM. (Return by Board of Customs.)

Countries to which Exported.	1898.		1899.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
Russia	15,084	7,088	12,004	6,176
Sweden and Norway	22,384	12,233	23,588	13,701
Denmark	32,903	12,877	30,235	12,813
Germany	16,916	8,514	19,422	10,232
Holland	16,760	5,395	15,665	4,662
Belgium	28,458	13,580	27,232	12,731
West Coast of Africa	41,571	45,275	42,061	48,390
British Possessions in South Africa...	10,167	8,980	7,885	7,549
British East Indies	301,330	161,439	242,801	137,595
Australasia	36,535	35,724	36,942	38,513
British North America	66,599	44,784	63,059	37,340
United States of America	79,213	81,146	75,433	85,501
British West Indies	5,755	6,234	6,355	6,257
Foreign West Indies	242	338	4,938	4,871
Chili	759	850	504	585
Brazil	7,497	5,807	12,015	9,078
Other Countries	7,005	10,055	8,306	11,168
Total	689,178	460,319	**628,445**	**447,162**

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Sandstone.

Under this heading are included all indurated sedimentary rocks which consisted originally of particles of siliceous sand, such as ordinary sandstone, grit, quartzite, "ganister," and also some "flagstone" and "freestone." They are obtained from strata of various geological ages from the Cambrian period upwards. The counties of Lancaster, York, Glamorgan, Dumfries, Edinburgh, and Lanark are the chief producers.

TABLE 241.

COUNTY OUTPUT of SANDSTONE from MINES and QUARRIES.

County	Quantity.			Value.
	From Mines.	From Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Bedford	—	150	150	19
Berks	—	3,335	3,335	360
Chester	3,051	124,921	127,972	45,157
Cornwall	—	5,182	5,182	1,011
Cumberland	3,492	48,860	52,352	16,523
Derby	—	165,366	165,366	74,463
Devon	1,938	69,549	71,487	6,507
Dorset	—	379	379	110
Durham	35	82,013	82,048	52,021
Gloucester	—	123,534	123,534	41,427
Hants (Isle of Wight)	—	3,162	3,162	407
Hereford	—	1,665	1,665	475
Kent	—	1,594	1,594	89
Lancaster	86,043	734,189	820,232	253,429
Lincoln	—	130	130	17
Monmouth	2,988	48,048	51,036	9,056
Norfolk	—	3,879	3,879	318
Northampton	3,738	4,893	8,631	2,598
Northumberland	75	132,387	132,462	59,406
Nottingham	—	5,907	5,907	3,409
Oxford	26	3,612	3,638	311
Rutland	—	5,377	5,377	4,333
Salop	—	36,757	36,757	6,671
Somerset	—	58,910	58,910	9,119
Stafford	628	63,429	64,057	15,206
Suffolk	—	—	—	—
Surrey	11,744	8,828	20,572	6,163
Sussex	1,895	12,650	14,545	2,984
Warwick	—	116,440	116,440	17,143
Westmoreland	290	2,796	3,086	1,173
Wilts	—	8,502	8,502	1,083
Worcester	—	67,868	67,868	6,904
York	169,561	771,390	940,951	465,470
Total	285,504	2,715,702	3,001,206	1,103,362
WALES:				
Anglesey	—	23,711	23,711	4,672
Brecon	—	75,413	75,413	11,785
Cardigan	—	6,123	6,123	651
Carmarthen	—	67,926	67,926	5,821
Carnarvon	—	1,815	1,815	165
Denbigh	—	23,042	23,042	6,732
Flint	—	7,421	7,421	3,937
Glamorgan	5,050	287,087	292,137	45,805
Merioneth	300	21,556	21,856	3,503
Montgomery	—	4,229	4,229	595
Pembroke	—	3,333	3,333	316
Radnor	—	65,814	65,814	12,780
Total	5,350	587,470	592,820	96,762
SCOTLAND:				
Aberdeen	—	9,756	9,756	3,821
Argyll	—	350	350	350
Ayr	2,596	149,359	151,955	47,481
Banff	—	1,700	1,700	132
Berwick	—	2,920	2,920	1,199
Bute	—	11,792	11,792	5,843
Caithness	—	22,089	22,089	21,867
Clackmannan	—	15,605	15,605	5,416
Dumbarton	—	30,355	30,355	10,217
Dumfries	—	245,912	245,912	83,039

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Production of Sandstone—*continued.*

County.	Quantity.			Value.
	From Mines.	From Quarries.	Total.	
SCOTLAND—*cont.*	Tons.	Tons.	Tons.	£
Edinburgh	—	183,174	183,174	29,183
Elgin	—	37,124	37,124	8,335
Fife	—	103,479	103,479	19,212
Forfar	—	142,948	142,948	64,990
Haddington	—	11,560	11,560	1,801
Inverness	—	530	530	41
Kincardine	—	7,187	7,187	2,110
Lanark	33,819	300,463	334,282	74,220
Linlithgow	—	90,685	90,685	21,489
Nairn	—	5,700	5,700	1,110
Orkney	—	424	424	231
Peebles	—	74	74	8
Perth	—	41,508	41,508	11,537
Renfrew	4,699	68,413	73,112	15,010
Ross and Cromarty	—	9,137	9,137	2,203
Roxburgh	—	937	937	140
Shetland	—	309	309	160
Stirling	13,031	39,345	52,376	12,707
Sutherland	—	1,178	1,178	883
Total	54,145	1,534,013	1,588,158	444,735
IRELAND:				
Antrim	—	693	693	69
Clare	—	10,794	10,794	5,714
Cork	—	300	300	15
Donegal	—	500	500	200
Down	—	4,650	4,650	232
Dublin	—	2,010	2,010	100
Galway	—	80	80	4
Kilkenny...	—	640	640	370
Leitrim	—	600	600	180
Limerick	—	2,085	2,085	110
Londonderry	—	5	5	1
Roscommon	—	173	173	104
Tipperary	—	420	420	25
Tyrone	—	4,783	4,783	1,507
Waterford	—	500	500	30
Westmeath	—	—	—	—
Wexford	—	380	380	72
Total	—	28,613	28,613	8,733
Isle of Man	—	1,827	1,827	112
Total for the United Kingdom for 1899	**344,999**	**4,867,625**	**5,212,624**	**1,653,704**
Total for preceding Year ...	358,478	4,883,637	5,242,115	1,632,786

Silver. *See also* LEAD ORE and IRON PYRITES.

All the British Silver is produced from Argentiferous Lead Ore. The quantity obtainable in 1899 amounted to 191,927 ounces. Value, £21,942.

SILVER extracted from Foreign Cupreous Iron Pyrites, 298,172 ozs. Value, £34,088.

See IRON PYRITES.

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TABLE 242.

VALUE of the SILVER BULLION and SPECIE IMPORTED into and EXPORTED from the UNITED KINGDOM. (Return by Board of Customs.)

Year.	Imports.	Exports.
	£	£
1899	**12,727,989**	**13,955,132**
Preceding Year	14,677,799	15,623,651

TABLE 243.

VALUE of the IMPORTS of SILVER ORE into the UNITED KINGDOM, including the value of the SILVER contained in imported LEAD and COPPER ORES and METALS. (Return by Board of Customs.)

Countries whence Imported.	Value.	Countries whence Imported.	Value.
	£		£
Argentine Republic	542	Peru	77,967
Australasia	438,423	Portugal...	448
British East Indies	20,784	Republic of Colombia	43,010
Central America	1,720	Spain	125,662
Chili	209,589	United States of America	15,068
France	3,250	Other Countries	7,003
Germany	8,862		
Mexico	80,262	**Total for 1899 ... ...**	**1,032,590**

Ports into which Imported.	Value.	Ports into which Imported.	Value.
	£		£
London	483,829	Southampton	55,092
Liverpool...	308,729	Swansea	44,261
Hull	2,352	Glasgow	550
Middlesbrough	1,100		
Newcastle	43,242	**Total for 1899 ... ...**	**1,032,590**
Shields, North	59,470		
Shields, South	33,965	Total for preceding Year ...	1,145,905

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TABLE 244.

PRICES of STANDARD SILVER in the LONDON MARKET since 1868.

(From the Annual Reports of the Deputy Master of the Royal Mint.)

Year.	Average Price per Ounce.	Year.	Average Price per Ounce.	Year.	Average Price per Ounce.
	d.		*d.*		*d.*
1868	60½	1879	51 9/16	1890	47¾
1869	60½	1880	52¼	1891	45 1/16
1870	60½	1881	51¾	1892	39 11/16
1871	60 9/16	1882	51 13/16	1893	35⅝
1872	60¼	1883	50 9/16	1894	29
1873	59¼	1884	50 11/16	1895	29⅛
1874	58 6/16	1885	48⅜	1896	30¾
1875	56 13/16	1886	45⅝	1897	27 9/16
1876	53	1887	44⅝	1898	26 15/16
1877	54¾	1888	42⅞	**1899**	**27 7/16**
1878	52 9/16	1889	42 11/16		

SILVER SMELTERS, EXTRACTORS, and REFINERS. (*See* COPPER and LEAD SMELTERS.)

Slate and Slate Slabs.

North Wales furnishes most of the slate; speaking roughly, rather more than three-fifths of the Welsh slate was produced from open quarries and nearly two-fifths from mines, that is to say, true underground excavations.

The two largest open workings are the Penrhyn quarry, near Bangor, producing 110,000 tons of slate annually, and the Dinorwic quarry, near Carnarvon, 95,000 tons; the largest underground workings are those belonging to the Oakley Slate Quarries Co., Ltd., at Festiniog, with an output of 54,693 tons last year.

It is necessary to remark that the figures below refer to argillaceous slate, and do not include the thin slabs which are sometimes split from certain limestones and sandstones for roofing purposes, and are known locally as "slate." These fissile stones are now included under the headings "Limestone" and "Sandstone" respectively.

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TABLE 245.

COUNTY OUTPUT of SLATE and SLATE SLABS from MINES and QUARRIES.

County.	Quantity.			Total Value.
	From Mines.	From Quarries.	Total.	
ENGLAND:	Tons.	Tons.	Tons.	£
Cornwall	485	31,923	32,408	36,600
Cumberland	4,164	502	4,666	11,510
Devon	—	13,901	13,901	3,054
Gloucester	—	—	—	—
Lancaster	2,394	17,762	20,156	58,979
Leicester	—	225	225	18
Somerset	—	1,750	1,750	4,614
Westmoreland	1,893	1,060	2,953	9,750
York	3,150	2,506	5,656	3,722
Total	12,086	69,629	81,715	128,247
WALES:				
Brecon	—	20	20	15
Cardigan	—	5,338	5,338	936
Carmarthen	—	1,333	1,333	1,590
Carnarvon	8,270	301,156	309,426	944,796
Denbigh	4,776	1,520	6,296	15,758
Merioneth	151,275	9,290	160,565	580,941
Montgomery	2,191	3,190	5,381	10,365
Pembroke	—	4,267	4,267	6,437
Total	166,512	326,114	492,626	1,560,838
SCOTLAND:				
Aberdeen	—	160	160	10
Argyll	—	30,580	30,580	62,440
Caithness	—	940	940	67
Perth	—	9,371	9,371	21,002
Total	—	41,051	41,051	83,519
IRELAND:				
Cork	—	1,223	1,223	2,138
Kerry	—	103	103	—*
Kilkenny	—	285	285	836
Tipperary	—	3,732	3,732	10,336
Wexford	—	100	100	100
Total	—	5,443	5,443	13,410
ISLE OF MAN:	—	19,005	19,005	1,057
Total for 1899	**178,598**	**461,242**	**639,840**	**1,787,071**
Total for preceding Year	177,664	491,195	668,859	1,900,228

* Included with Cork.

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TABLE 246.

DETAILS of the OUTPUT of SLATE and SLATE SLABS from MINES.

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
ENGLAND.			
CORNWALL:		Tons.	£
East Cornwall, Saint Neot, Liskeard	East Cornwall Slate Co.	485	513
CUMBERLAND:			
Honister, Borrowdale	Buttermere Green Slate Co., Ltd....	4,164	11,456
Low Wood, Ulpha	William Casson		
Quay Foot, Borrowdale	Robinson Bros.		
Riggs Head, Borrowdale	William Leyland		
LANCASHIRE:			
Cove, Coniston	Broughton Moor Slate Quarries Syndicate.	2,394	7,079
Parrock End, Coniston	Buttermere Green Slate Co., Ltd....		
Saddlestone, Coniston	T. & J. Mandell		
Walna Scar, Coniston	Walna Scar Slate Co.		
WESTMORELAND:			
Banks, Elterwater (*Green Slates*)	John & E. Bowness	150	527
Elterwater, Elterwater „	Elterwater Green Slate Co., Ltd. ...	543	1,900
Elterwater (Original), Elterwater. „	Buttermere Slate Co., Ltd.... ...	857	3,400
Jumb, Kentmere ... „	James Stephenson & Co.	60	240
Loughrigg, Rydal ... „	Thomas Newton	127	254
Steel Rigg, Kentmere... „	James Stephenson & Co.	156	624
Total	... ...	1,893	6,945
YORKSHIRE, N. RIDING:			
Burtersett East, Hawes	R. M. Metcalfe	2,500	1,250
Cragg End, Arkendale	R. T. Hammond	12	4
East Shaw, Gayle	Taylor and Metcalf	365	182
Penhill, West Witton	George Kearton	225	125
Scar Head, or Gayle, Hawes ...	Richard Metcalfe & Son	30	35
Scrafton, Scrafton	Butterfield and Paley	18	16
Total	... ...	3,150	1,612
WALES.			
CARNARVONSHIRE:			
Bugail, Penmachno	Bugail Slate Quarry Co., Ltd. ...	1,622	5,571
Clogwyn, Trefriw	W. W. Jones...	90	360
Penmachno, Penmachno	Penmachno Slate Co., Ltd. ...	3,799	—*
Prince Llewelyn, Dolwyddelen ..	Prince Llewelyn Slate Quarry Co., Ltd.	624	1,771
Rhiwbach, Penmachno	Rhiwbach Slate Quarry Owners ...	2,135	7,854
Total	... ...	8,270	15,556
DENBIGHSHIRE:			
Dressed:			
Cambrian, Glyn Ceiriog, Chirk ...	Glyn Slate Co., Ltd.	2,272	6,775
Wynne, „ „ „ ...	„ „ „	2,044	5,727
Total	... ...	4,316	12,502
Undressed:			
Cambrian, Glyn Ceiriog, Chirk ...	Glyn Slate Co., Ltd.	330	16
Wynne, „ „ „ ...	„ „ „	130	7
Total	... ...	460	23

* Value given confidentially; included with Merionethshire

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Slate and Slate Slabs—*continued.*

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
WALES—*cont.*			
MERIONETHSHIRE:			
Dressed:		Tons.	£
Abercorris, Corris	Abercorris Slate Co., Ltd.	958	2,485
Aberllefenny, Corris	A. R. Pryce	4,996	10,096
Braichgoch and Gaewern, Corris ...	Braichgoch Slate Quarry Co., Ltd.	5,677	14,193
Bryn Eglwys and Cantrybedd, Abergynolwyn.	William McConnel	5,385	16,667
Bwlch-y-slater, Blaenau Festiniog...	Bwlch-y-slater Quarry Co., Ltd. ...	954	3,420
Corwen, Corwen	Corwen Slate Mining Co.	1,117	2,320
Croesor, Llanfrothen	Park and Croesor Slate Quarries Co., Ltd.	2,577	—*
Croes-y-ddwy-afon, Festiniog ...	W. Simms Bull & Co.	111	353
Diphwys Casson	Diphwys Casson Slate Quarries Co.	4,300	—*
Gartheiniog, Mallwyd	Henry Mallory	650	1,787
Glyn Ffestiniog (formerly Conglog)	R. R. H. Lockhart Ross	152	361
Henddol, Barmouth Junction ...	Cambrian Estates Co.	535	1,576
Hendreddu, Aberangell	Hendreddu Slate and Slab Co. ...	1,100	2,900
Llechwedd, Blaenau Festiniog ...	J. W. Greaves and Sons	21,187	76,803
Maen Offeren, Blaenau Festiniog...	Maen Offeren Slate Quarry Co., Ltd.	12,251	42,403
Manod, Festiniog	Jones, Williams, & Thomas ...	251	811
Minllyn, Dinas Mawddwy	Minllyn Slate Co.	805	—*
Moelferna, Llangollen	Moelferna and Dee Side Slate and Slab Co., Ltd.	6,276	14,496
New Welsh Slate (formerly Cwmorthin), Tan-y-grisiau, Blaenau Festiniog.	New Welsh Slate Co., Ltd.... ...	5,630	21,377
Oakeley, Blaenau Festiniog ...	Oakeley Slate Quarries Co., Ltd. ...	54,693	—*
Park, Llanfrothen	Park and Croesor Slate Quarry Co., Ltd.	740	—*
Ratgoed, Corris	Exors. of late H. N. Hughes ...	195	487
Rhiwaedog, Llandderfel	R. J. Ll. Price	15	45
Rhosydd, Tan-y-grisiau, Blaenau Festiniog.	New Rhosydd Slate Quarry Co., Ltd.	4,398	—*
Voelgron, Festiniog	John Williams, Blaenau Festiniog	12	45
Votty and Bowydd, Blaenau Festiniog.	Votty and Bowydd Slate Quarries Co., Ltd.	13,586	—*
Wrysgan, Tan-y-grisiau, Blaenau Festiniog.	Wrysgan Slate Quarry Co., Ltd. ...	2,724	9,780
Total of values given confidentially		... ...	320,798*
Total of Dressed Slate and Slabs		151,275	553,175†

* These values are given confidentially.
† Including values given confidentially in Carnarvonshire.

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Slate and Slate Slabs—*continued.*

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
MONTGOMERYSHIRE:			
Era, Esgairgeiliog	Era Welsh Slate Quarries, Ltd. ...	935	1,972
Rhiwarth, Llangynog	Owen Roberts	604	1,510
Rhiwgwreiddyn, Ceinws	Towyn Co., Ltd.	652	2,511
Total		2,191	5,993

TABLE 247.

ANNUAL OUTPUT and VALUE of SLATE and SLATE SLABS in the United Kingdom from the Year 1874 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	No returns.	—	1882	504,780*	1,292,550	1891	415,029	987,000
1874	151,989	Not given.	1883	498,062	1,246,332	1892	418,241	1,025,922
1875	153,282	„	1884	485,664	1,174,020	1893	438,993	1,107,626
1876	156,887	„	1885	468,954	1,175,772	1894	461,673	1,171,366
1877	172,130	„	1886	456,208	1,107,169	1895	581,760	1,274,146
1878	169,041	„	1887	464,334	1,118,818	1896	586,933	1,338,256
1879	142,862	„	1888	471,788	1,057,535	1897	613,175	1,661,223
1880	152,691	„	1889	458,436	1,048,143	1898	668,859	1,900,228
1881	162,341	„	1890	434,352	1,027,235	**1899**	**639,840**	**1,787,071**

* Since 1882 the returns from Quarries are included.

TABLE 248.

QUANTITY and VALUE of ROOFING SLATES EXPORTED from the UNITED KINGDOM in the Year 1899. (Return by Board of Customs.)

Countries to which Exported.	1898.		1899.	
	Quantity.	Declared Value.	Quantity.	Declared Value.
	Number.	£	Number.	£
Sweden	30,000	387	—	—
Denmark...	2,664,100	35,358	2,434,100	32,441
Germany	21,457,800	116,181	24,379,600	127,570
Holland	1,167,900	4,393	375,700	1,510
Belgium	172,000	135	347,000	267
Channel Islands...	660,700	6,196	530,900	4,778
France	822,000	1,370	545,000	1,003
Gibraltar	4,600	38	10,000	20
Italy	—	—	40,300	284

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Quantity and Value of Roofing Slates Exported—*continued.*

Countries to which Exported.	1898.		1899.	
	Quantity.	Declared Value.	Quantity.	Declared Value.
	Number.	£	Number.	£
Austrian Territories	460,200	1,511	226,800	607
West Coast of Africa	—	—	15,200	130
United States of America	10,500	33	6,100	26
Dutch Guiana	15,200	115	6,000	51
British Possessions in South Africa	606,600	5,712	776,100	7,150
British East Indies	79,400	801	22,000	230
China	—	—	25,000	201
Australasia	1,649,600	14,762	1,118,100	10,423
British West India Islands and Guiana	35,000	517	—	—
Argentine Republic	27,000	272	20,000	230
Total	29,862,600	187,781	**30,877,900**	**186,921**

Soapstone.

No soapstone was obtained in the United Kingdom in 1899.

Sodium.

The Aluminium Co., Ltd., of Oldbury, near Birmingham, are practically the only makers of sodium in the United Kingdom. The quantity made last year was about 380 tons. At the present market price the output of sodium would be worth £41,350.

Spelter. *See* ZINC.

Spiegeleisen. *See* IRON.

Strontium Sulphate.

This mineral is dug from shallow pits in Gloucestershire and Somersetshire. It is found in the Red Marl, belonging to the Keuper Beds.

TABLE 249.

	Quantity.	Value.
GLOUCESTERSHIRE AND SOMERSETSHIRE:	Tons.	£
From Quarries under the Quarries Act	475	237
From Sundry Shallow Quarries not under the Quarries Act	12,154*	6,077
Total for 1899	**12,629**	**6,314**
Total for preceding Year	12,941	3,674†

* Shipped from Bristol Docks in 1899. (Return furnished by Mr. F. B. Girdlestone, General Manager.)
† Estimated.

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TABLE 250.

ANNUAL OUTPUT and VALUE of STRONTIUM SULPHATE in the United Kingdom from the Year 1884 to 1899.

Year.	Quantity.	Value.*	Year.	Quantity.	Value.*
	Tons.	£		Tons.	£
1884	11,422	22,844	1892	5,066	1,266
1885	9,800	4,900	1893	5,812	2,325
1886	13,602	5,750	1894	6,823	1,962
1887	15,169	7,584	1895	12,273	3,529
1888	7,061	3,532	1896	18,042	5,188
1889	5,976	2,988	1897	14,987	4,310
1890	10,276	5,138	1898	12,941	3,674
1891	8,061	4,030	**1899**	**12,629**	**6,314**

Tin Ore.

Practically speaking all the tin ore is obtained from Cornwall. The ore occurs both in granite and the overlying slate. No alluvial deposits are worked at the present day; the so-called "stream-works" are merely works for extracting any tin ore still remaining in suspension in the muddy water flowing away from the dressing floors of the mines.

The largest tin mine in Cornwall is Dolcoath; it produced during the past year 2,078 tons of dressed tin ore, or nearly one-third of the total output of the county.

In spite of the very marked rise in the value of tin, which attained a higher price last year than in any previous year since 1873, the output of ore diminished.

TABLE 251.

SUMMARY of the PRODUCE of TIN ORE.

	Dressed Tin Ore. (*Black Tin.*)		Comparison with preceding Year.		Amount of Tin obtainable by Smelting.		Value of the Tin Ore at the Mines or Works.
CORNWALL:	Tons.	cwts.	Tons	cwts.	Tons.	cwts.	£
TIN ORE obtained from MINES	5,659	0	— 927	17	3,678	7	406,829
TIN ORE obtained from QUARRIES	21	4	— 24	7	13	16	1,382
TIN ORE obtained from Foreshores, the Refuse of Dressing Floors, &c.	709	3	— 36	17	319	2	32,088
Total	6,389	7	— 989	1	4,011	5	440,299
DEVONSHIRE:							
TIN ORE obtained from MINES	3	0	+ 1	9	2	0	210
Total for the United Kingdom for 1899	**6,392**	**7**	**— 987**	**12**	**4,013**	**5**	**440,509**
Total for preceding year	7,379	19	+ 259	12	4,647	15	288,325

The value of the 4,013 tons 5 cwts. of Metallic Tin obtainable in 1899, according to the mean of monthly prices of English Block Tin in the London Market for the year, is £508,094.

* Some of these values are merely estimates.

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TABLE 252.

DETAILS of OUTPUT of TIN ORE from MINES.

Name and Situation of Mine.	Dressed Tin Ore. (*Black Tin.*)		Tin Ore sold undressed. (*Tin Stuff.*)		Amount of Tin obtainable in Smelting.		Value of Ore at the Mine.
CORNWALL:	Tons.	cwts.	Tons.	cwts.	Tons.	cwts.	£
Basset, Limited, Illogan	268	0	72	0	—		19,265
Botallack, St. Just	36	0	—		—		2,208
Budnick, Perranzabuloe (F. G. Enys) ...	0	18	—		—		50
Ditto ditto (Sampson, Mitchell, and Co.)	0	17	—		—		54
Carn Brea and Tincroft, Illogan	492	7	—		—		33,284
Creegbrawse, Kenwyn	—		22	0	—		42
Dolcoath, Camborne	2,078	18	—		—		151,874
East Downs and Silverweel, St. Agnes ...	0	2	—		—		7
East Kit Hill, Stokeclimsland...	—		—		—		—
East Pool and Agar, Carn Brea	816	0	—		—		54,459
East Unity Wood, Kenwyn	—		63	0	—		97
Great North Downs	—		—		—		—
Great Royalton, Roche	0	4	—		—		9
Great St. George and Droskyn, Perranporth	6	3	—		—		267
Great Work, Breage	42	7	—		—		3,393
Killifreth, Scorrier	—		687	0	—		726
Levant, St. Just	551	8	—		—		38,940
Levant, North (Wheal Geevor) St. Just ...	12	19	—		—		841
North Crofty, Illogan	4	8	—		—		245
Old Poldice, St. Austell	—		11	0	—		16
Pednandrea, Redruth	2	4	—		—		157
Poldice, St. Day...	—		74	0	—		44
Saint Just United Consols, St. Just	0	11	—		—		40
South Condurrow, Gwennap	1	5	—		—		75
South Polgooth and Treloweth Mewan, St. Mewan.	5	0	—		—		348
South Wheal Crofty, Illogan	—		260	0	—		142
Tolgullow United, St. Day	—		100	0	—		49
Tregurtha Downs, Goldsittmey	8	0	—		—		538
Treveddoe, Warleggan...	13	5	—		—		1,000
Ventonwyn, St. Stephens-in-Bramwell ...	0	11	—		—		40
West Wheal Kitty, St. Agnes...	444	0	—		—		34,634
Wheal Gorland, St. Day	—		25	0	—		70
Wheal Grenville, Camborne	677	0	—		—		51,101
Wheal Jane, Chacewater	—		596	0	—		261
Wheal Kitty, St. Agnes	137	19	—		-		10,423
Wheal Sisters, St. Erth	14	14	—		—		830
Dressed Tin Ore (*black tin*) obtainable from the 1,910 tons of Ore sold undressed (*tin stuff*). Estimated.	24	0	—		—		—
Dressed Tin Ore (*black tin*) obtainable from certain lots of arsenical pyrites mixed with tin ore.	20	0	—		—		1,300*
Total	5,659	0	1,910	0	—		406,829
DEVONSHIRE:							
Golden Dagger, Manaton	3	0	—		2	0	210

* Estimated.

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TABLE 253.

OUTPUT of TIN ORE from QUARRIES.

QUARRIES.	Dressed Tin Ore.		Tin Ore undressed.		Amount of Tin obtainable in Smelting.		Value of the Ore at the Quarries.
CORNWALL:	Tons.	cwts.	Tons.	cwts.	Tons.	cwts.	£
Burngullow (Garker and Pentruff) ...	2	15	—	—	13	16	207
Great Wheal Fortune	4	14	—	—			321
Trenoweth	—	—	27	0			25
Treveddoe	9	13	—	—			567
Wheal Prosper	3	12	—	—			262
Dressed Tin Ore (*black tin*) obtainable from the 27 tons of ore sold undressed. Estimated.	0	10	—	—			—
Total	**21**	**4**	**27**	**0**	**13**	**16**	**1,382**

TABLE 254.

OUTPUT of TIN ORE from FORESHORES, and from REFUSE SAND and MUD DISCHARGED by DRESSING FLOORS into Streams and Rivers, &c.

FORESHORES AND WORKS FOR TREATING MINE REFUSE.	Dressed Tin Ore. (*Black Tin.*)		Amount of Tin obtainable in Smelting.		Value of the Ore at the Works.
CORNWALL:	Tons.	cwts.	Tons.	cwts.	£
Red River, together with river from Carn Brea and Tincroft					
River from Wheal Basset, West Basset, Wheal Uny, &c., to Portreath...	709	3	319	2	32,088
Other Stream Works					
Total	**709**	**3**	**319**	**2**	**32,088**

TABLE 255.

ANNUAL OUTPUT and VALUE of TIN ORE ("*Black Tin*") in the United Kingdom from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	14,885	1,056,835	1882	14,045	805,847	1891	14,488	735,240
1874	14,039	788,310	1883	14,469	735,189	1892	14,357	734,565
1875	13,995	735,606	1884	15,117	669,254	1893	13,689	637,053
1876	13,688	600,923	1885	14,376	662,390	1894	12,910	487,523
1877	14,142	572,763	1886	14,232	780,302	1895	10,612	370,530
1878	15,045	530,737	1887	14,189	878,831	1896	7,663	259,928
1879	14,665	586,608	1888	14,370	894,665	1897	7,120	254,218
1880	13,738	673,142	1889	13,809	729,213	1898	7,380	288,325
1881	12,898	697,444	1890	14,911	782,492	**1899**	**6,392**	**440,509**

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TABLE 256.

MEAN MONTHLY PRICES of METALLIC TIN per TON in the LONDON MARKET.

Month.	English Tin.		Colonial and Foreign Tin.	
	Block.	Refined.	Australian.	Straits.
1899	£ s. d.	£ s. d.	£ s. d.	£ s. d.
January	103 6 8	105 8 4	100 6 5	100 0 11
February	112 5 0	114 5 0	109 0 4	108 6 7
March	110 15 0	112 15 0	108 1 5	107 18 4
April	117 7 6	119 7 6	114 16 10	115 0 7
May	120 10 0	122 10 0	117 7 8	117 11 10
June	121 2 6	123 2 6	118 14 6	118 13 0
July	138 16 3	141 1 3	134 17 6	135 15 2
August	144 0 0	146 0 0	140 16 7	140 19 1
September	149 0 7	151 0 7	146 5 3	145 17 4
October	148 6 3	150 5 0	144 12 8	144 12 0
November	134 17 6	136 17 6	130 19 7	130 12 1
December	118 18 0	120 18 0	114 14 0	114 10 9
Highest Prices	153 0 0	155 0 0	149 15 0	149 10 0
Lowest „	95 10 0	97 10 0	92 10 0	92 0 0
Mean of the monthly prices for 1899	**126 12 1**	**128 12 7**	**123 7 9**	**123 6 6**
Mean prices for preceding Year	74 8 1	76 8 0	75 13 0	71 7 0

TABLE 257.

The Average Price per Ton of METALLIC TIN in the London Market for each Year from 1873 to 1899.

Year.	English Block.	Colonial (Australian).	Year.	English Block.	Colonial (Australian).
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
1873	133 7 0	—	1887	112 19 6	111 16 6
1874	108 8 0	92 13 0	1888	117 5 5	117 5 3
1875	90 2 0	83 2 0	1889	96 10 9	93 10 10
1876	79 10 2	74 3 11	1890	97 13 3	94 7 6
1877	73 3 6	68 3 10	1891	94 4 1	91 16 9
1878	65 12 3	61 6 0	1892	96 10 5	93 15 4
1879	72 6 0	71 19 0	1893	88 18 2	86 4 8
1880	91 5 0	86 15 0	1894	72 11 10	69 7 4
1881	97 9 3	92 15 6	1895	67 4 1	64 7 2
1882	106 14 0	102 15 6	1896	63 12 0	60 19 2
1883	97 1 6	93 1 0	1897	65 8 7	62 12 9
1884	84 11 7	81 3 8	1898	74 8 1	75 13 0
1885	89 7 2	86 16 3	**1899**	**126 12 1**	**123 7 9**
1886	101 8 6	97 16 6			

TABLE 258.

AVERAGE VALUE per TON of DRESSED TIN ORE (BLACK TIN).

Year.	Dressed Tin Ore. (*Black Tin.*)	Year.	Dressed Tin Ore. (*Black Tin.*)
	£ s. d.		£ s. d.
1898	39 1 4	1899	68 18 3

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TABLE 259.

THE TIN STANDARDS.

(Furnished by the Consolidated Tin Smelting Co., Ltd., Penzance.)

The Standard is the amount paid by the smelter per hundred-weight of metal contained in the ore as calculated from the results of an assay by the dry method, after deduction of 1¼ from the produce per 20 (6¼ per cent.) for returning charges. By an old trade custom there is also a deduction on the weight of the parcel of tin ore of 3 lbs. per cwt. It is customary to reckon the price by the nearest eighth of a £ above or below the calculated price.

Date.	Common. Price per Cwt.	Refined. Price per Cwt.	Date.	Common. Price per Cwt.	Refined. Price per Cwt.
1899.	s. d.	s. d.		s. d.	s. d.
January 10th	96 0	97 6	August 22nd	144 0	146 0
„ 24th	112 0	114 0	September 5th ...	147 6	149 0
February 22nd	106 0	108 0	„ 19th ...	151 0	153 0
March 21st	108 0	110 0	October 3rd	150 0	152 0
April 5th	111 0	113 0	„ 17th	147 0	149 0
„ 18th	115 0	117 0	„ 31st	144 0	146 0
May 2nd	120 0	122 0	November 14th ...	121 0	123 0
June 27th	122 0	124 0	„ 28th ...	126 0	128 0
July 11th...	128 0	130 0	December 12th ...	116 0	118 0
„ 25th	142 0	144 0	„ 27th ...	105 0	107 0
August 9th	147 6	149 0			

NOTE.—The above figures show about the average Standards paid.

TABLE 260.

IMPORTS of TIN and TIN ORE into the UNITED KINGDOM in the Year 1899.

(Return by Board of Customs.)

Countries whence Imported.	Tin Ore.	Value.	Tin :—Blocks, Ingots, and Bars.	Value.
	Tons.	£	Cwts.	£
Russia	108	1,243	—	—
Germany	441	8,007	3,626	23,131
Holland	725	14,449	46,183	263,412
Belgium	106	3,333	25	131
France	206	10,707	5,202	28,632
Spain	114	4,199	—	—
Italy	39	1,044	—	—
East Coast of Africa :				
Portuguese Possessions	42	1,870	—	—
Java	—	—	3,380	17,750
China	—	—	1,000	7,120
Bombay	—	—	9,601	59,488
Straits Settlements	30	1,870	389, 56	2,409,615
Ceylon	—	—	400	2,600
Australasia :				
West Australia	19	1,484	—	—
Victoria	63	4,085	26,346	160,842
New South Wales	14	626	27,630	159,065
Queensland	—	—	6,586	42,418
Tasmania	—	2	250	1,166
New Zealand	—	—	440	2,574
United States of America	112	3,352	—	—
Peru	220	13,210	220	1,175
Chili	3,978	181,909	22,765	118,062
Other Parts...	7	262	168	1,001
Total Imports for 1899	**6,224**	**251,652**	**543,478**	**3,298,182**
Total for preceding Year	5,620	157,057	406,788	1,389,601

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TABLE 261.

EXPORTS of TIN from the UNITED KINGDOM in the YEAR 1899.
(Return by Board of Customs.)

Countries to which Exported.	British.		Foreign.	
	Quantity.	Value.	Quantity.	Value.
	Tons.	£	Tons.	£
Russia :				
Northern Ports	500	64,455	254	31,177
Southern Ports	425	51,891	323	41,573
Sweden	323	40,470	2	241
Norway	106	13,243	2	333
Denmark	64	8,052	16	1,868
Germany	355	43,282	1,495	174,671
Holland	128	15,997	2,473	281,384
Belgium	6	749	18	2,480
France	596	74,613	173	20,544
Portugal, Azores, and Madeira	244	30,371	15	1,632
Spain and the Canaries	389	49,799	268	32,972
Italy	128	15,910	38	4,421
Austrian Territories	123	14,697	—	—
Greece	42	5,291	—	—
Bulgaria	15	1,873	—	—
Roumania	44	5,355	—	—
Turkey :				
European	129	16,417	—	—
Asiatic	151	18,797	4	533
Egypt	129	16,797	—	—
British Possessions in South Africa	34	3,618	1	9
British East Indies	51	6,271	1	166
China	10	1,361	—	—
Australasia	14	1,687	—	—
British North America...	216	27,242	—	—
United States of America :				
On the Atlantic	94	11,340	11,712	1,389,947
British West India Islands and British Guiana ...	5	545	—	—
Foreign West Indies	11	1,332	—	—
Mexico	16	1,734	5	585
Peru	10	1,182	1	49
Chili	52	6,334	—	—
Brazil	110	13,843	1	152
Uruguay	7	916	21	2,847
Argentine Republic	148	18,855	2	259
Other Parts	20	2,531	31	3,639
Total Exports for 1899	**4,695**	**586,850**	**16,856**	**1,991,482**
Total for preceding Year	5,468	394,898	15,635	1,062,070

LIST of TIN SMELTERS in the UNITED KINGDOM.

Owner of Smelting Works.	Situation of Works.	Postal Address.
CORNWALL :		
The Consolidated Tin Smelting Co., Ltd., T. W. Field, Managing Director.	Chyandour, Penzance. Carvedras, Truro.	Head Office : Chyandour, Penzance. London Office : 39, Lombard Street, E.C. Liverpool Office : 12, Irwell Chambers, Union Street.
Cornish Tin Smelting Co.	Redruth	Redruth.
Penpoll Tin Smelting Co., Ltd.	Devoran	Devoran, R.S.O., and Canada Works, Birkenhead.
Redruth Tin Smelting Co.	Redruth	Redruth.
Williams, Harvey, & Co.	Hayle	Mellanear, Hayle.
GLOUCESTER :		
Pass, C., & Son, Ltd.	Bristol	Bedminster Smelting Works, Bristol.
WARWICKSHIRE :		
Jones, R., & Co.	Birmingham ...	Stone Yard, Deritend, Birmingham.
GLAMORGANSHIRE :		
Stephens, James	Swansea	Black Vale Copper and Tin Smelting Works, Swansea.
Sutton, T. S., & Sons	Millands Works, Neath.	Neath.
" "	Bower Street, Neath	"
" "	Pontycoron Works, Skewen, Neath.	"

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Umber. *See* OCHRE.

Uranium Ore.

The mine mentioned below is worked solely for Uranium minerals.

TABLE 262.
OUTPUT of URANIUM ORE.

Name and Situation of Mine.	Owner.	Quantity.	Estimated Value at the Mine.
CORNWALL:		Tons.	£
Uranium Mines, Grampound Road ...	Minerals Research Syndicate, Ltd. ...	7½	275
Total for preceding Year		26	1,185

TABLE 263.
ANNUAL OUTPUT and VALUE of URANIUM ORE in the United Kingdom from the Year 1890 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£
1890	22	2,200	1895	40	2,071
1891	31	620	1896	35	1,500
1892	37	740	1897	30	1,367
1893	25	500	1898	26	1,185
1894	19	815	**1899**	**7½**	**275**

Wolfram.

Cornwall forms no exception to the rule that Tin ore is frequently accompanied by wolfram.

TABLE 264.
SUMMARY of the PRODUCE of WOLFRAM.

—	Quantity.	Value at the Mines or Works.
CORNWALL:	Tons.	£
Wolfram obtained from Mines	89	3,573
Wolfram obtained from "Stream Works" *	5	258
Total for 1899	**94**	**3,831**
Total for preceding Year	326½	15,844

TABLE 265.
DETAILS of OUTPUT of WOLFRAM from MINES.

Name and Situation of Mine.	Owner.	Quantity.	Value at the Mine.
CORNWALL:		Tons.	£
Carn Brea and Tincroft, Illogan ...	Carn Brea and Tincroft, Ltd. ...	44	2,333
East Pool and Agar United, Illogan ...	East Pool Mining Co.	22	1,141
East Kit Hill, Stokeclimsland	Kit Hill Wolfram Co	—	—
Great St. George and Droskyn, Perranporth	Nobel's Explosives Co.	1½	33
South Wheal Crofty, Illogan	South Wheal Crofty Mining Co....	1	6
Wheal Gorland, St. Day	W. H. Jeffery	20½	60
Total		**89**	**3,573**

* As defined on page 257.

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TABLE 266.

The Annual Production and Value of WOLFRAM in the United Kingdom, from the Year 1873 to 1899.

Year.	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	50	527	1882	58	747	1891	138	3,341
1874	33	545	1883	111	1,443	1892	125	3,000
1875	46	382	1884	64	1,104	1893	22	420
1876	23	172	1885	374	4,799	1894	—	—
1877	15	150	1886	140	2,236	1895	—	—
1878	10	100	1887	54	1,269	1896	43	1,355
1879	13	120	1888	60	1,625	1897	125	2,008
1880	1	9	1889	½	8	1898	326½	15,844
1881	54	544	1890	104	1,848	**1899**	**94**	**3,831**

Zinc Ore.

The Zinc Ore is almost entirely blende, and is obtained from veins in the Palæozoic rocks principally in Cumberland, Wales, and the Isle of Man.

The loss of Zinc in smelting British Ores by the ordinary methods has been estimated at 15 to 24 per cent. of the amount of metal in the Ore.

Messrs. Brunner, Mond & Co., Ltd., are now extracting zinc from blende by Hoepfner's electrolytic process. The quantity of metallic zinc obtained by this process in 1899 was 421 tons. Though the loss of zinc approaches that of the old furnace method, the purity of the metal separated electrolytically is great, and the extra price it fetches, compared with that of ordinary spelter, forms one great advantage of the new process.

TABLE 267.

SUMMARY of the OUTPUT of ZINC ORE.

County.	Zinc Ore.	Amount of Zinc obtainable by Smelting.	Value of the Ore at the Mine.
MINES.			
ENGLAND:	Tons.	Tons.	£
Cornwall	42	11	62
Cumberland	7,184	2,540*	36,958
Derby	453	50	1,132
Durham	92	29	290
Northumberland	604	— †	3,020
Salop	737	333	4,448
Total	9,112	2,963	45,910
WALES:			
Anglesey	57	13	272
Cardigan	1,819	690	10,303
Carmarthen	9	3	8
Carnarvon	1,477	529	6,881
Denbigh	3,273	1,474	25,976
Flint	4,728	2,030	34,693
Montgomery	24	8	101
Total	11,387	4,747	78,234
SCOTLAND:			
Dumfries	34	12	119
ISLE OF MAN	2,602	976	15,219
Total for the United Kingdom and the Isle of Man for 1899.	**23,135**	8,698	**139,482**
Total for preceding Year	23,552½	8,574	117,784

* Including Northumberland. † Included with Cumberland.

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The value of the 8,698 tons of Metallic Zinc (Spelter) obtainable in 1899, according to the mean monthly Prices of English Spelter in the London Market for the Year, is £220,132.

TABLE 268.

DETAILS of the OUTPUT of ZINC ORE from MINES.

Name and Situation of Mine.	Zinc Ore.	Per-centage of Metal by Assay.	Amount of Zinc obtainable by Smelting.	Value of Ore at the Mine.
ENGLAND.				
CORNWALL:				
Wheal Polmear, St. Austell	42	36	11½	62
CUMBERLAND:	Tons.		Tons.	£
Nenthead, Alston	6,328	42	} 2,540*	36,958
Nentsbury, Alston...	336	—		
Thornthwaite, Keswick	520	48		
Total	7,184	—	2,540*	36,958
DERBYSHIRE:				
Mill Close, Darley	453	—	50	1,132
DURHAM:				
Grass Hill, Harwood	92	41	29	290
NORTHUMBERLAND:				
Carshields, West Allendale	604	—	†	3,020
SHROPSHIRE:				
Bog, Minsterley	101	56	44	782
Gritt Minsterley	3	48	1	18
Roman Gravels, East, Worthen...	539	58	245	2,839
Snailbeach, Minsterley	94	58	43	809
Total	737	—	333	4,448
WALES.				
ANGLESEY:				
Mona, Amlwch "*Bluestone*" ... ... (*See also Lead Ore*)	53	30	12	250
Morfa du Amlwch "*Bluestone*" ... (*See also Lead Ore*)	4	30	1	22
Total	57	—	13	272
CARDIGANSHIRE:				
Bryn-yr-Afr, Talybont	615	47	225	3,691
Castell, Ponterwyd	386	53	160	2,719
Esgairmwyn, Pontrhydfendigaid	15	30	3	23
Frongoch, Devil's Bridge...	549	48	205	2,196
West Frongoch, Llanfihangel-y-creuddyn	254	49	97	1,674
Total	1,819	—	690	10,303

* Including Northumberland. † Included with Cumberland.

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Details of Output of Zinc Ore from Mines—*continued.*

Name and Situation of Mine.	Zinc Ore.	Percentage of Metal by Assay.	Amount of Zinc obtainable by Smelting.	Value of Ore at the Mine.
WALES—*cont.*				
CARMARTHENSHIRE:				
Carmarthen	9	30	3	8
CARNARVONSHIRE:	Tons.		Tons.	£
Aberllyn, Bettws-y-coed	143	35	38½	173
Hafna, Llanrwst	583	45	204	2,680
Park, Llanrwst	168	45	59	822
Trecastell, Conway	583	50	227½	3,206
Total	1,477	—	529	6,881
DENBIGHSHIRE:				
Llanarmon District, Llanarmon	335	45	117	1,735
Minera, Wrexham	2,938	59	1,357	24,241
Total	3,273	—	1,474	25,976
FLINTSHIRE:				
East Halkyn, Holywell	361	53	149½	2,889
Great Holway, Holywell	248	56	108½	1,984
Halkyn, Holywell	1,444	55	621	10,847
North Hendre, Mold	160	58	72½	1,018
Old Milwr, Holywell	162	44	55½	809
Pantybuarth, Mold	186	52	75½	1,213
Plantation, Holywell	122	56	53½	1,015
Talacre, Gronant	42	53	17	275
Trelogan, Llanasa	2,003	56	877	14,643
Total	4,728	—	2,030	34,693
MONTGOMERYSHIRE:				
Dylife, Llanbrynmair	24	45	8	101
SCOTLAND.				
DUMFRIESSHIRE:				
Queensberry, Wanlockhead, Abington	34	—	12	119
ISLE OF MAN.				
Great Laxey, Laxey Glen	1,390	50	542	9,765
Snaefell, Lonan	1,212	46	434	5,454
Total	2,602	—	976	15,219

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TABLE 269.

ANNUAL OUTPUT and VALUE of ZINC ORE in the United Kingdom from the Year 1873 to 1899.

Year	Quantity.	Value.	Year.	Quantity.	Value.	Year.	Quantity.	Value.
	Tons.	£		Tons.	£		Tons.	£
1873	15,969	61,166	1882	32,539	93,571	1891	22,216	113,445
1874	16,830	48,195	1883	29,728	92,895	1892	23,880	104,010
1875	23,978	75,110	1884	25,563	74,029	1893	23,754	81,276
1876	23,613	90,142	1885	24,668	67,000	1894	21,821	67,311
1877	24,406	86,151	1886	23,156	63,759	1895	17,478	49,430
1878	25,438	80,565	1887	25,445	76,182	1896	19,319	66,553
1879	22,200	81,531	1888	26,408	96,984	1897	19,278	69,134
1880	27,548	98,546	1889	23,202	96,925	1898	23,552½	117,784
1881	35,527	110,043	1890	22,041	109,890	**1899**	**23,135**	**139,482**

TABLE 270.

IMPORTS of ZINC ORE, CRUDE ZINC, and MANUFACTURED ZINC into the UNITED KINGDOM in the Year 1899. (Return by Board of Customs.)

Countries whence Imported.	Zinc Ore.		Crude Zinc.		Manufactured Zinc.		Total Value of Imports.
	Quantities.	Value.	Quantities.	Value.	Quantities.	Value.	
	Tons.	£	Tons.	£	Cwts.	£	£
Germany	791	8,257	13,025	321,099	129,740	178,629	507,985
Holland	158	1,407	21,878	543,712	205,176	286,063	831,182
Belgium	322	3,406	17,998	439,550	70,625	96,402	539,358
France	1,593	9,771	5,799	138,863	15,489	27,489	176,123
Spain	1,751	6,972	—	—	—	—	6,972
Italy	13,473	99,194	576	5,970	10	14	105,178
Greece	1,765	8,425	—	—	—	—	8,425
Tunis	10,465	43,855	—	—	—	—	43,855
Australasia	2,146	13,958	589	10,501	—	—	24,459
Canada	51	794	246	4,367	—	—	5,161
United States	2,227	20,934	9,570	193,682	765	2,462	217,078
Other countries	2,800	7,401	268	5,637	1,931	2,871	15,909
Total Imports for 1899	**37,542**	**224,374**	**69,949**	**1,663,381**	**423,736**	**593,930**	**2,481,685**
Total for preceding Year ...	53,095	220,141	77,470	1,444,202	425,462	478,089	2,142,432

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TABLE 271.

EXPORTS of ZINC and ZINC ORE from the UNITED KINGDOM in the Year 1899.

(Return by Board of Customs.)

Countries to which Exported.	Zinc Ore.		Zinc or Spelter (Crude and Manufactured).	
	British.	Foreign.	British.	Foreign.
	Tons.	Tons.	Tons.	Tons.
Russia :				
Northern Ports ...	—	—	12	8
Southern Ports ...	—	—	8	—
Denmark	—	—	27	—
Germany	—	2	1,391	40
Holland	—	—	1,579	80
Belgium	7,988	1,947	18	4
Channel Islands	—	—	23	6
France	52	54	26	1
Portugal, Azores, and Madeira	—	—	23	4
Spain and the Canaries	—	—	9	14
Gibraltar	—	—	16	1
Italy	—	—	2	25
Egypt	—	—	31	4
West Coast of Africa	—	—	22	21
East Coast of Africa	—	—	6	12
British Possessions in South Africa	—	—	51	82
Aden and Dependencies	—	—	9	—
British East Indies	—	—	2,385	111
China	—	—	387	2
Islands in the Pacific	—	—	—	9
Hong Kong	—	—	42	2
Japan	—	—	95	3
Australasia :				
West Australia ...	—	—	5	5
South Australia...	—	—	27	225
Victoria ...	—	—	28	6
New South Wales	—	—	75	130
Queensland	—	—	23	14
New Zealand	—	—	56	242
British North America	—	—	54	161
United States of America : On the Atlantic	—	60	1	220
British West India Islands and British Guiana ...	—	—	11	2
Mexico...	—	—	3	4
Chili	—	—	17	17
Brazil	—	—	109	48
Argentine Republic ...	—	—	19	7
Other Parts	—	—	45	73
Total Exports for 1899	**8,040**	**2,063**	**6,635**	**1,583**
Total for preceding Year	6,379	1,051	8,665	1,511

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TABLE 272.

MEAN MONTHLY PRICES of ZINC (SPELTER) per TON in the LONDON MARKET.

Month.	English Spelter	Foreign Spelter.	
	Swansea.	Silesian. Ordinary Brands.	Silesian. Special Brands.
1899.	£ s. d.	£ s. d.	£ s. d.
January	25 5 8	24 16 9	25 3 9
February	28 1 8	27 10 4	27 13 9
March	27 13 0	27 7 6	27 11 0
April	28 9 1	28 3 9	28 6 7
May	28 15 4	28 11 1	28 14 1
June	27 5 3	26 11 1	27 7 10
July	25 19 8	25 15 0	25 18 7
August	24 7 6	24 0 0	25 5 0
September	23 6 8	22 19 1	23 11 1
October	22 8 5	22 2 10	22 14 1
November	21 6 3	20 19 8	21 9 5
December	20 15 8	20 5 0	20 13 6
Highest prices	28 17 6	28 12 6	28 17 6
Lowest prices	20 5 0	19 17 6	20 5 0
Mean of Monthly Prices for 1899 ...	**25 6 2**	**24 18 6**	**25 7 5**
Mean prices for preceding Year	20 18 8	20 9 8	20 8 7

TABLE 273.

The Average Price Per TON of METALLIC ZINC in the London Market for each Year from 1873 to 1899.

Year.	English Spelter.	Foreign Spelter.	Year.	English Spelter.	Foreign Spelter.
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
1873	—	26 15 0	1887	16 1 5	15 4 0
1874	—	23 6 6	1888	19 2 10	18 0 1
1875	—	24 5 0	1889	20 9 2	19 19 8
1876	23 18 4	23 7 11	1890	23 13 11	23 8 11
1877	21 15 0	20 0 0	1891	23 18 0	23 7 8
1878	19 10 0	17 18 4	1892	21 15 5	21 3 10
1879	17 5 0	16 13 6	1893	18 1 5	17 11 6
1880	19 4 6	18 11 3	1894	16 2 4	15 12 3
1881	16 18 0	16 4 6	1895	15 5 8	14 16 4
1882	17 15 6	17 1 0	1896	17 6 8	16 16 7
1883	16 1 0	15 6 6	1897	17 19 10	17 13 10
1884	15 8 2	14 9 0	1898	20 18 8	20 8 7
1885	14 18 10	14 0 0	**1899**	**25 6 2**	**25 7 5**
1886	15 14 0	14 6 0			

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LIST of ZINC EXTRACTORS and SMELTERS in the UNITED KINGDOM.

Owner of Smelting Works.	Situation of Works.	Postal Address.
CHESHIRE:		
Brunner, Mond and Co., Ltd.	Winnington ...	
CUMBERLAND:		
Nenthead and Tynedale Lead and Zinc Co., Ltd. (in liquidation).	Near Milton, Carlisle.	Milton, Carlisle. Office:—4, St. Nicholas Buildings, Newcastle-on-Tyne.
DENBIGHSHIRE:		
United Minera Mining Co., Ltd.	Minera	Minera, Wrexham. (Smelting works not in use.)
GLAMORGANSHIRE:		
Dillwyn & Co.	Llansamlet ...	Offices:—Albion Chambers, Cambrian Place, Swansea.
English Crown Spelter Co., Ltd.	Port Tennant ...	Swansea.
Williams, Foster & Co., and Pascoe Grenfell and Sons, Ltd.	Swansea	Upper Bank Spelter Works, Swansea.
Swansea Vale Spelter Co., Ltd.	Llansamlet ...	Llansamlet, R.S.O., Glamorganshire.
Villiers Spelter Co., Ltd.	Llansamlet ...	Landore, R.S.O., Glamorganshire.
Vivian and Sons	Morriston ...	Morriston Spelter Works, Morriston, Swansea.
GLOUCESTERSHIRE:		
Lysaght, John, Limited	Netham	Bristol.
LANCASHIRE:		
Kenyon and Co. (Recover Metallic Zinc from the Waste Material from Galvanizing Iron, &c.)	Warrington ...	Zinc Works, Bank Quay, Warrington.
LANARKSHIRE:		
Central Metal and Smelting Co.	Glasgow	290, Crownpoint Road, Glasgow.

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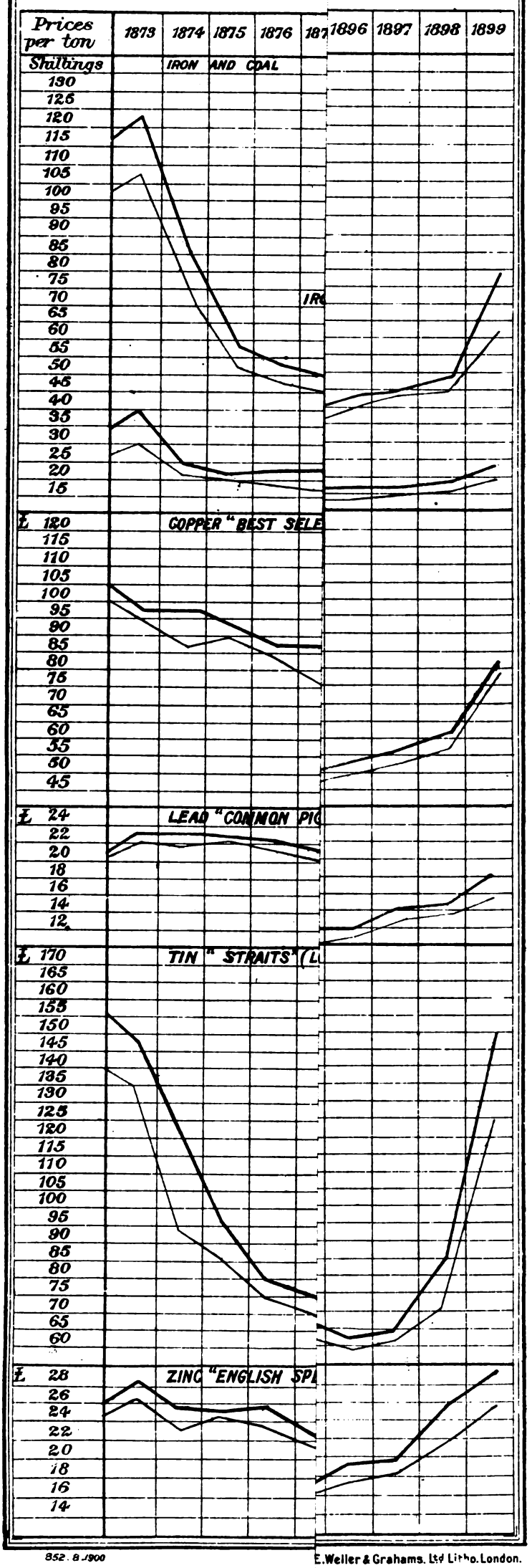

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EDITED BY

C. LE NEVE FOSTER, D.Sc., F.R.S.

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